Harbor District Development Permit Application Package

Flood Reduction and Drainage Enhancement Project

Manila Community Services District

14 April 2023

→ **The Power of Commitment**

GHD
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Eureka, California 95501, United States
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Contents

Attachments

HUMBOLDT BAY
HARBOR, RECREATION AND CONSERVATION DISTRICT

P.O. BOX 1030
Eureka, California 95502
(707) 443-0801
(707) 443-0800 fax

Date Filed_______________

General Information	For Commission Use
1.) Name & Address of Developer, Project Sponsor and Legal Owner Manila Community Services District (MCSD) 1901 Park St. Arcata, CA 95521	A. Application No.____________ Application Type: Franchise ☐ Permit ☐ Lease ☐
2.) Address of Project and Assessor's block, lot and Parcel Number See Figure 1, Figure 2, and Attachment 1	B. Date Received by Harbor District C. Date Accepted for filing by BOC
3.) Name, Address and Telephone No. of Person to be contacted concerning this project Christopher Drop, General Manager same address as (1) above manilacsd1@sbcglobal.net 707-444-3803	D. Date of Public Notice E. Date of Acceptance EIR or Negative Declaration F. Date of Public Notice G. Date of Public Hearings
4.) Attach list of names and addresses of all adjoining property owners See Attachment 2	H. Date of Approval
5) List and Describe any other related Permits & Other Public Approvals required for this Project, including those required by City, Regional, State & Federal Agencies. See Attachment 3	Disapproval ________ Conditional ________ Approval ________ I. Expiration Date
6.) Existing Zoning District See Attachment 4, page 1	Describe in detail the proposed project: Comments
7.) Proposed Use of Site (Title of Project for which this form is filed) Flood Reduction and Drainage Enhancement Project	

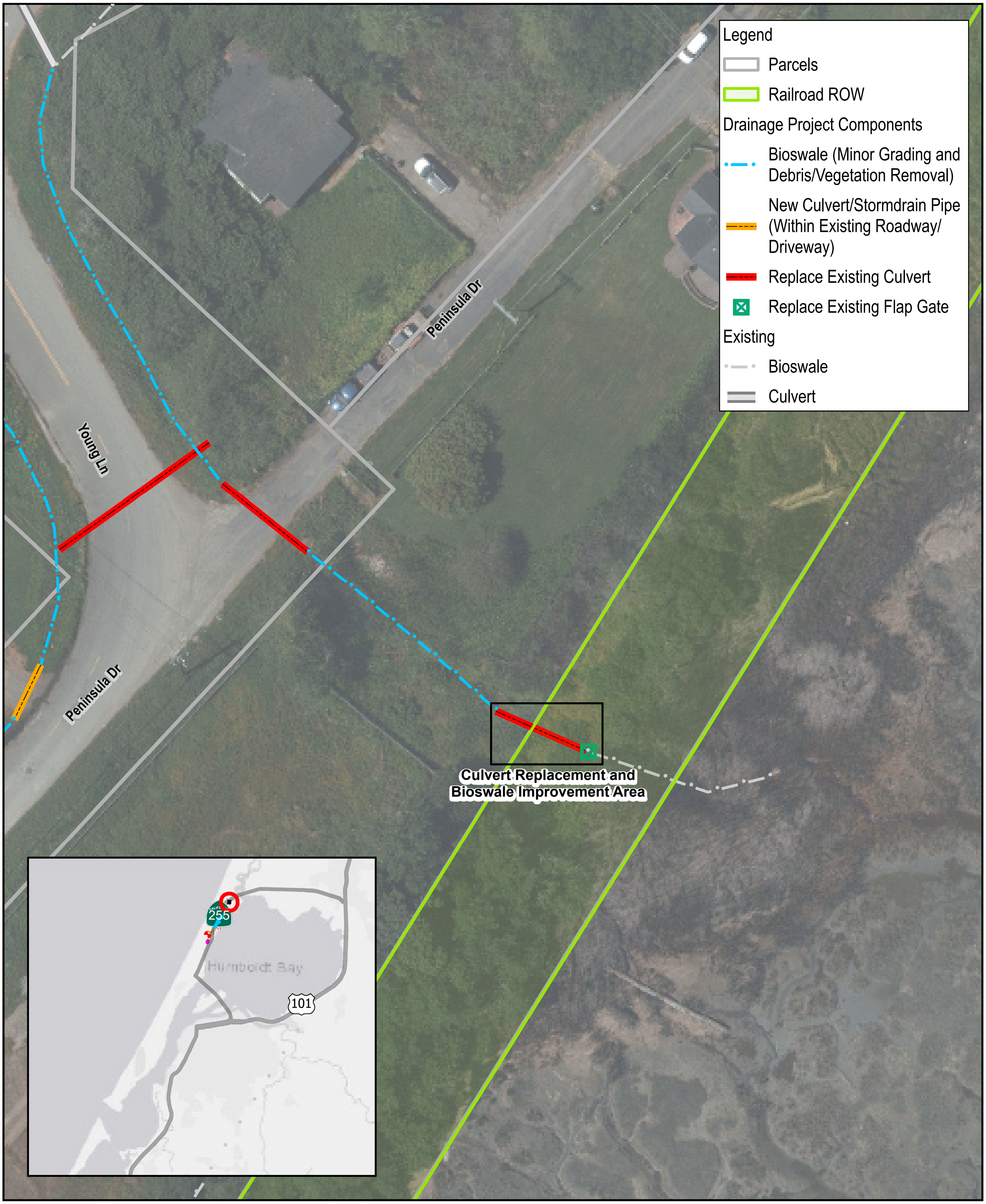
Describe in detail the proposed project

The Manila Community Services District (MCSD) Flood Reduction and Drainage Enhancement Project (Project) includes multiple locations within approximately 1.5 miles of Manila. The Project will provide needed improvements to MCSD, County, and North Coast Rail Authority (Great Redwood Trail Agency) drainage infrastructure. Improvements include clearing and grading of existing drainage ditches/bioswales, replacement of failing or undersized culverts, new culverts and drainage ditches/bioswales, and rain gardens. The goals of the Drainage Project are to reduce flooding, increase climate change resiliency, and enhance ecosystem services. Two of the project locations are jurisdictional to the Harbor District.

The first location is a culvert replacement and bioswale improvements in MCSD's Drainage Management Area I (DMA I), which includes the areas adjacent to Young Lane and the northern extent of Peninsula Drive (Figure 1). Runoff from within DMA I is generally conveyed adjacent to the roadways from west of Hwy 255, along Young Lane, under a private driveway and through the railroad right of way before discharging to Humboldt Bay. The Project will replace the existing 18-inch diameter culvert and flap gate at a railroad crossing with a 30-inch diameter culvert with flap gate as well as remove debris and aggraded sediment from within the existing bioswale.

The second location within Harbor District jurisdiction includes clearing and grading of an existing bioswale in MCSD's DMA IV, along the shoreline of the Manila Community Park (Figure 2). Runoff from within DMA IV is generally conveyed from west to east, originating in the Lupin Avenue area to the conveyance system along and under Hwy 255 and crosses Peninsula Drive, the railroad right-of-way, and Mill Street, then along the northern boundary of Manila Community Park to Humboldt Bay. The Project will remove debris, vegetation, and aggraded sediment from the existing bioswale at the eastern edge of the existing drainage channel through the Manila Community Park.

See Attachment 4 ISMND for a description of the Project to implement additional flood reduction and drainage improvements through MCSD's service area. See Attachment 6 for Design Plans (sheet C-101 and C-105).



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Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

Manila Community Services District
Manila Flood Reduction & Drainage Enhancement Project

Culvert Replacement and Bioswale Improvement

Project No. **12572691**
Revision No. **-**
Date **Apr 2023**

FIGURE 1

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Data source: World Imagery (Clarity): This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseExport: This layer is not intended to be used to export tiles for offline. Data Collection and Editing: This layer may be used in various ArcGIS apps to support data collection and editing, with the results used internally or shared with others, as described for these use cases.
AirPhoto_2019_:
World_Light_Gray_Base: Bureau of Land Management, Esri, HERE, Garmin, USGS, EPA, NPS
World Topographic Map - labelless: California State Parks, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, USDA. Created by: jlopez4

Paper Size ANSI A

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

Manila Community Services District
Manila Flood Reduction & Drainage Enhancement Project

Project No. **12572691**
Revision No. **-**
Date **Apr 2023**

Bioswale Improvement

FIGURE 2

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Data source: World Imagery (Clarity): This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseExport: This layer is not intended to be used to export tiles for offline. Data Collection and Editing: This layer may be used in various ArcGIS apps to support data collection and editing, with the results used internally or shared with others, as described for these use cases.
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World Topographic Map - labelless: California State Parks, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, USDA. Created by: jlopez4

Answer all questions completely. If the question does not apply to your project, so indicate by marking N.A. If you have questions, please contact the Harbor District Office.

Project Description

8.Site Size

The portions of the MCSD Flood Reduction and Drainage Enhancement Project that are jurisdictional to the Harbor District are located on large sites (over 10 acres), however work is only occurring on small portions of each parcel, less than 0.02 acres in size.

9.Square Footage

The new culvert will be 34 linear feet and work will occur within less than 900 square feet of Harbor District jurisdiction.

The bioswale improvements near Manila Park will occur under approximately 500 square feet of area within Harbor District jurisdiction.

10.Number of floors of construction

n/a

11.Amount of off-street parking provided

No new parking will be provided, and no existing parking will be removed.

12.Attach plans

See Attachment 6.

13.Proposed scheduling

Construction will occur within a single construction season, between the summer of 2024 and December 2024. If feasible, vegetation clearing outside of the nesting bird season would occur first, between August 15, 2023 and March 15, 2024. Construction of these portions of the overall Project will require approximately 2-3 weeks.

14.Associated projects

This culvert replacement and bioswale improvements are part of the larger MCSD Flood Reduction and Drainage Enhancement Project (Drainage Project). The larger Drainage Project takes place in multiple locations across approximately 1.5 miles of Manila. The goals of the Drainage Project are to reduce flooding, increase climate change resiliency, and enhance ecosystem services. The Drainage Project will provide much needed maintenance to MCSD's drainage infrastructure, replace existing failing drainage infrastructure, and upsize or install new drainage infrastructure. See Attachment 4 ISMND Section 1 for a detailed description of the Drainage Project.

15.Anticipated incremental development

None, the Project serves existing maintenance needs.

16.If residential, include the number of units, schedule of unit sizes, range of sale prices or rents, and type of household size expected.

n/a

17.If commercial, indicate the type, whether neighborhood, city or regionally oriented, square footage of sales area, and loading facilities
n/a

18.If industrial, indicate type, estimated employment per shift, and loading facilities.
n/a

19.If institutional, indicate the major function, estimated employment per shift, estimated occupancy, loading facilities, and community benefits to be derived from the project.
n/a

20.If the project involves a variance, conditional use or recognizing application, state this and indicate clearly why the application is required.
n/a

Are the following items applicable to the project or its effects? Answer yes or no. Discuss all items answered yes.

21.Change in existing features of any bays, tidelands, beaches, lakes or hills, or substantial alteration of ground contours.

The replacement of the culvert through the railroad prism off Young Lane (north end of Manila) and clearing of vegetation/debris/sediment within the existing channels will occur on tidelands, below elevation +9.36 Mean Lower Low Water (MLLW). The Project will replace the existing 18-inch diameter culvert and flap gate in the same location at the railroad crossing with 30-inch dimeter culvert with flap gate. Concrete headwalls will be constructed at the inlet and outlet of the new culvert to improve stability and maintenance access. Bioswale improvements near the culvert replacement and Manila Park will occur within the same general footprint of the existing bioswales.

The larger Drainage Project will to re-grade and/or remove debris in existing drainage swales, construct new bioswales, replace existing culverts, and install rain gardens and valley gutters. The work will generally maintain existing drainage patterns and similar ground contours while making minor modification to improve drainage flows. See Attachment 4, CEQA ISMND Section 1, Project Description for more information.

22.Change in scenic views or vistas from existing residential areas or public lands or roads.

No. Project components are at or below ground elevation and will not block or alter views of Humboldt Bay from residential areas, public lands, or roads. See Attachment 4, CEQA ISMND Section 4.1 Aesthetics.

23.Change in pattern, scale or character of general area of project.

No. The Project will maintain the visual character of the area by clearing debris blockages, sediment aggradation, and woody vegetation within existing bioswale flow paths with minor grading to restore historical or stable geometry. See Attachment 4, CEQA ISMND Section 4.1 Aesthetics.

24.Significant amounts of solid waste or litter.

No. The Project will generate limited solid waste during construction and is not expected to generate a significant increase of services for solid waste disposal needs during operation. See Attachment 4, CEQA ISMND Section 4.19 Utilities and Service Systems (page 66).

25.Change in dust, ash, smoke, fumes or odors in vicinity.

No change in ash or smoke will occur in the vicinity. Minor odors from the use of equipment during construction activities will be intermittent and temporary and will dissipate rapidly from the source with an increase in distance. Temporary increase in fugitive dust may occur during construction and earth moving activities. However, the Project will implement Mitigation Measure AQ-1 which requires BMP measures to reduce potential impacts related to fugitive dust. See Attachment 4, CEQA ISMND Section 4.3 Air Quality for more information related to air quality impacts and Mitigation Measure.

26.Change in ocean, bay, lake, stream or ground water quality or quantity, or alteration of existing drainage patterns.

No, drainage patterns will remain similar, yet more efficient due to maintenance and upsizing. See Attachment 4, CEQA ISMND Section 4.10 Hydrology.

27.Substantial change in existing noise or vibration levels in the vicinity.

A. During Construction

Construction of the Project will result in a temporary noise increase associated with the use of construction equipment for the Project for a single construction season. See Attachment 4, pages 55-58 for a discussion of noise or groundborne vibration impacts.

B. During Project Utilization

No, the Project does not involve operation noise or vibration.

28.Site on filled land or on slope of 10% or more.

Yes. The culvert replacement is located in the existing railroad prism. The Project does not include steep slopes of more than 10%.

29.Use of disposal or potentially hazardous materials, such as toxic substances, flammable or explosives.

Construction of the Drainage Project will include the transport and use of common hazardous materials inherent to the construction process, including petroleum products such as fuel and lubricants for construction equipment and vehicles, concrete curing compounds, and solvents for construction of Project improvements. These materials are commonly used during construction, are not acutely hazardous, and will be used in relatively small quantities. The established regulatory frameworks, BMPs, and requisite construction protocols provide appropriate risk mitigation and hazard protections, thus the Project will not create a significant hazard to the public or environment from hazardous materials. See Attachment 4 CEQA ISMND, page 42-47 for a discussion on hazardous material.

The Project is located within proximity to Class 2 hazards, therefore contamination present from adjacent or nearby sites has the potential to migrate into the Project Area. Implementation of Mitigation Measure HAZ-1 (see Attachment 4, page 46) to implement Corridor Study Report Recommendations will reduce this impact to a less-than-significant level.

30.Substantial change in demand for municipal services (police, fire, water, sewage, etc.)

No. The Project improvements will not induce population growth and will not result in the need to increase staffing, create new hazardous conditions, or result in a modification to the road system that would restrict access for emergency services. See Attachment 4, CEQA ISMND Section 4.15 Public Services.

31.Substantially increase fossil fuel consumption (electricity, oil, natural gas, etc.).

No. Construction will require the use of fuels, primarily gas, diesel, and motor oil. Inefficient construction-related operations will also be avoided due to the measures in Mitigation Measure AQ-1 (Measures to Reduce Air Pollution). See Attachment 4, CEQA ISMND Section 4.3 Air Quality, Section 4.6 Energy Resources, and Section 4.8 Greenhouse Gas Emissions.

32.Relationship to larger project or series of projects

This culvert replacement and bioswale improvements are part of the larger MCSD Flood Reduction and Drainage Enhancement Project (Drainage Project), as described in question 14 above. The larger Drainage Project also contributes to MCSD's communitywide approach to address persistent flooding and drainage problems caused by undersized, disconnected, and failing infrastructure. This Drainage Project builds on and is consistent with the 1987 Storm Drainage Master Plan by Oscar Larson & Associates (OLA 1987) which identified several recommended drainage improvement projects, in addition to 2018 field investigations by Manila CSD, GHD, and Cal Poly Humboldt's Capstone Engineering Class.

ENVIRONMENTAL SETTING:

33.Describe the project site as it exists before the project including information on topography, soil stability, plants and animals, and any cultural, historical, or scenic aspects. Describe any existing structures on the site and the use of the structures. Attach photographs of the site. Snapshots or polaroid photos will be accepted.

The culvert replacement area is surrounded by a railroad prism located in a marine wetland. The area is gently sloping and surrounded by hard-stem tule (Photo 1). Humboldt Bay is situated to the east of the Project. The majority of the Project will be placed within the existing railroad prism and therefore will not be visible. Portions of the Project are aboveground will generally match the ground elevation and therefore will not block views of Humboldt Bay from the shoreline. There is currently no public access to the Project Area and none is proposed.

The bioswale improvements in Manila Park are located in an existing bioswale adjacent to Humboldt Bay (Photo 2). The vegetation at the site generally included invasive spartina grass, slough sedge, seaside arrowgrass, and pickleweed. Improvements will remain at ground level and will not block views of Humboldt Bay from the shoreline. The site is visible and accessible through Manila Park.

Within the Drainage Project area, the Eureka and Klamath River Railroad (E.K.R Railroad) was identified as historically significant and eligible for the California Register of Historical Places Criterion A based on its association with the historic redwood lumber industry in the American West. The Project will not cause a substantial adverse change to the resource and no mitigation is required. See attached Cultural Resource Investigation (CRI) for full resource description. Archaeological resources were not identified, however inadvertent discovery and cultural monitoring mitigation and will occur as described in the CEQA document (Attachment 4). Attachment 5 includes the ISMND Appendices, which include detailed reports on biological resources.

Project Area Photos

Photo 1 ***Tall vegetation blocking views towards the culvert replacement.***

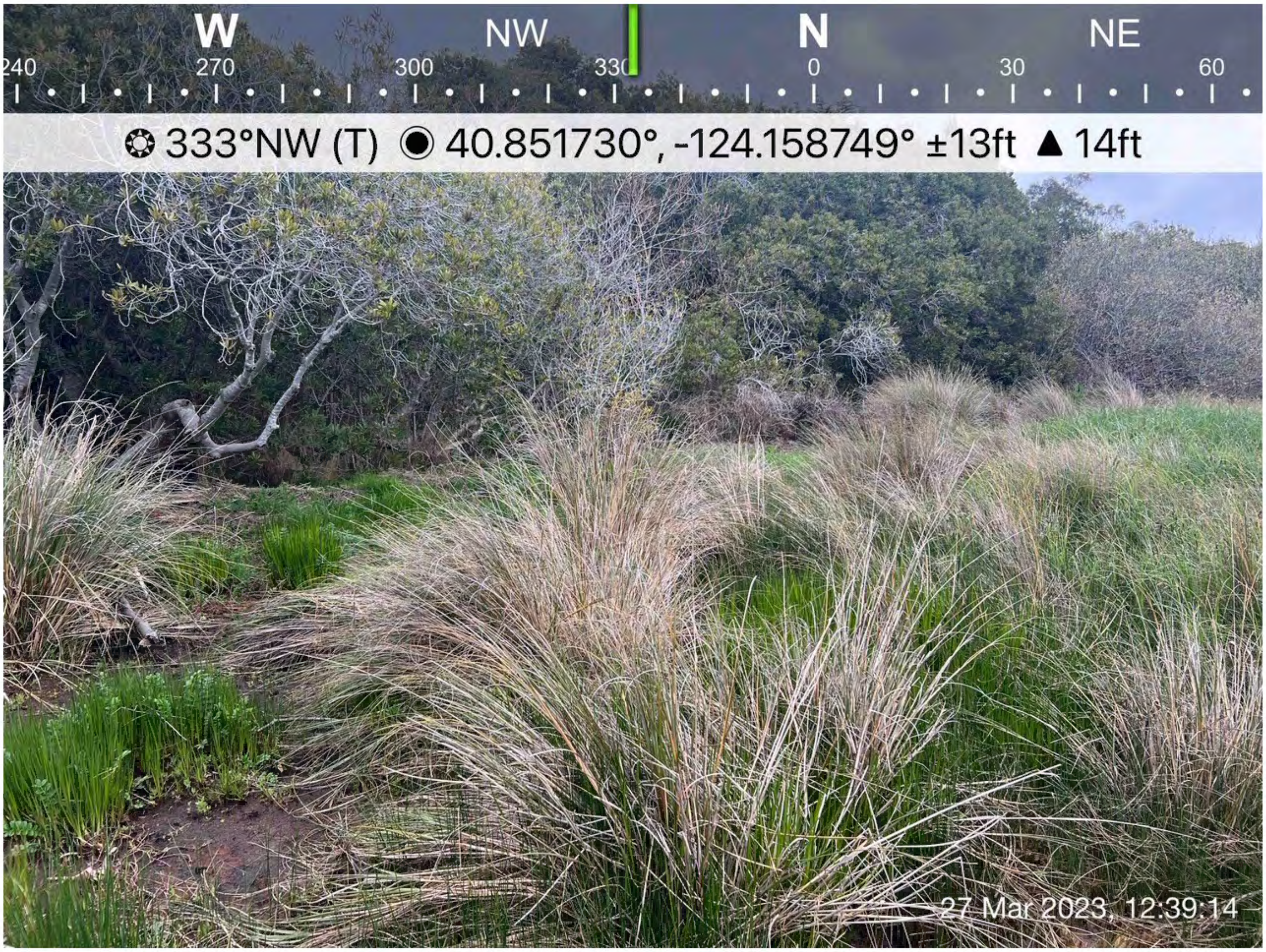

Photo 2 Bioswale improvement location in Manila Park.

34.Describe the surrounding properties, including information on plants and animals and any cultural, historical, or scenic aspects. Indicate the type of land use (residential, commercial, etc.) intensity of land use (one-family, apartment houses, shops, department stores, etc.) and the scale of development (height, frontage, set-back, rear yard, etc.) Attach photographs of the vicinity. Snapshots or polaroid photos will be accepted.

Views within the surrounding area of the culvert replacement are limited to bioswales, roadside vegetation, State Route 255, and adjacent residences (Photos 3-5). Thick vegetation generally blocks views to the west of the Project Area. A couple of single family rural residential houses with ample yards, gravel or dirt driveways, and natural vegetation are located past this vegetated buffer. Peninsula Drive and Young Lane lead to Highway 255. are Highway 255 is located approximately 0.06 miles from the Project Area. Views of Humboldt Bay, to the east, are visible from some locations.

The bioswale improvements in Manila Park are bordered by Humboldt Bay to the east, a residence to the north, and Manila Park to the south and west. The area directly west of the project is dense with wax myrtle and willow trees (Photo 6). Along the shoreline, outside of the project footprint, the vegetation generally consists of salt grass, hard-stem tule, spartina grass, and pickleweed (photo 7).

Surrounding Area Photos

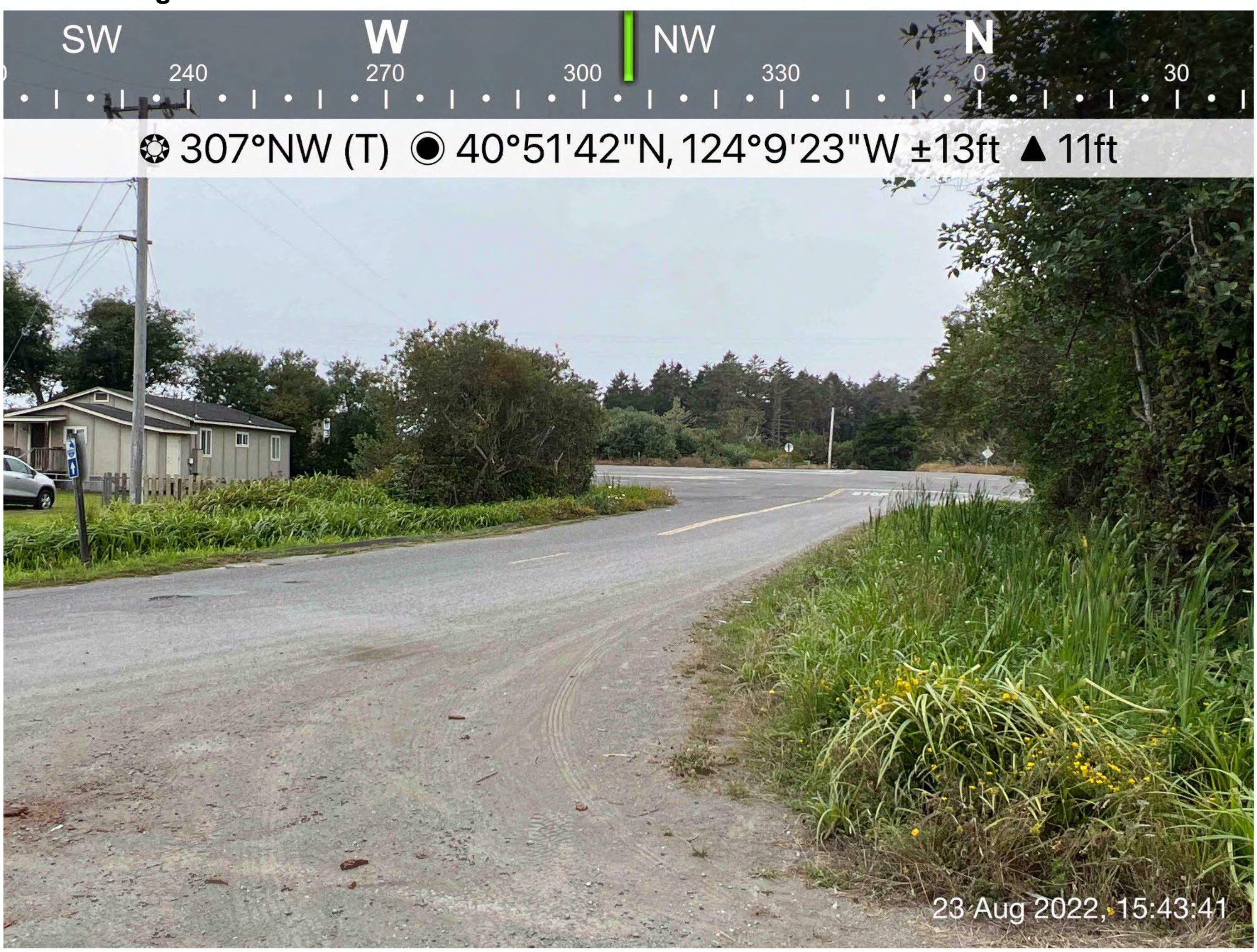

Photo 3 ***View from Young Lane to Highway 255, over 150 feet from the culvert replacement.***

Photo 4 *View from Peninsula Drive near Young Lane.*

Photo 5 ***View of Young Lane, over 150 feet from the culvert replacement.***

Photo 6 ***Looking north along the Humboldt Bay shoreline near the bioswale improvement location in Manila Park.***

Photo 7 ***Looking south along the Humboldt Bay shoreline near the bioswale improvement location in Manila Park.***

------------------------ Questions 35; 36 and 39 MUST BE ANSWERED! --------------------

35.How will the proposed use or activity promote the public health, safety, comfort, and convenience?

For decades areas throughout Manila areas have been afflicted with chronic flooding every winter. Winter rains and shallow ground water overwhelm the existing drainage system, resulting in widespread flooding of roadways, residences, and public spaces within this severely disadvantaged community. In some instances, the flooding can cause roadway safety concerns due to hazardous conditions for pedestrians and automobiles, damages to residential property, as well as health risks due to contaminated stormwater.

The purpose of the larger Drainage Project is to reduce chronic flooding and enhance drainage throughout the community of Manila, including increases to sea level rise resiliency. The Drainage Project will address the lack of connectivity and capacity within the current drainage network. The culvert replacement and bioswale improvements are a critical piece of Manila's drainage network due to its location at the downstream-most end. The Project is one coordinated component of improved drainage connectivity, efficiency, and capacity.

36.How is the requested grant, permit, franchise, lease, right, or privilege required by the public convenience and necessity?

It is a necessity for the community of Manila to reduce chronic flooding by having properly functioning drainage infrastructure.

37.Financial statement:

A. Estimated cost of the project.

These activities are estimated to cost between $100,000-$200,000. The total estimated cost of the larger Drainage Project is $1.9million.

B. How will the project be financed.

The Project is funded through a California Natural Resources Agency grant.

38.Describe fully directions necessary to arrive at project site.

The culvert replacement can be accessed off Highway 255 at Young Lane and Peninsula Drive. The Project in Manila Park can be accessed from Peninsula Drive off Highway 255.

39.Will the Applicant agree that as a condition of the permit being issued to Applicant, to indemnify and hold harmless the Humboldt Bay, Harbor Recreation and Conservation District from any and all claims, demands, or liabilities for attorneys' fees obtained from or against demands for attorney's fees, costs of suit, and costs of administrative records made against District by any and all third parties as a result of third party environmental actions against District arising out of the subject matter of this application and permit, including, but not limited to, attorney's fees, costs of suit, and costs of administrative records obtained by or awarded to third parties pursuant to the California Code of Civil Procedure Section 1021.5 or any other applicable local, state, or federal laws, whether such attorneys' fees, costs of suit, and costs of administrative records are direct or indirect, or incurred in the compromise, attempted compromise, trial, appeal, or arbitration of claims for attorneys' fees and costs of administrative records in connection with the subject matter of this application and permit?

Yes.

NOTE

The District hereby advises the Applicant that, under California Public Resources Code Section 21089, the District when a lead agency under the Environmental Quality Act of 1970, as amended, pertaining to an Environmental Impact Report (EIR) or a Negative Declaration may charge and collect from the Applicant a reasonable fee in order to recover the estimated costs incurred by the District in preparing an Environmental Impact Report (EIR) or Negative Declaration for the project and the procedures necessary to comply with the provisions of the public resources code on the Applicants project. In the event your project contains an analysis of issues pertaining to the Environmental Quality Act of 1970, as amended, for which District staff is not competent to independently review, or District requires the same in preparation of an Environmental Impact Report (EIR) or Negative Declaration for the project, the District may retain a reviewing consultant to evaluate the content of the Administrative-Draft EIR and Final EIR or Negative Declaration with respect to these issues. The cost of such reviewing consultant services shall be borne by the Applicant.

CERTIFICATION: I hereby certify that he statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Dated: 04.18.2023 ____________________

For Manila Community Services District

Attachments

Attachment 1

Project Addresses and Parcel Numbers

Project Addresses and Parcel Numbers

NAME	APN	ADDRESS	MAILING ADDRESS
Northwestern Pacific Railroad Co (operated by Great Redwood Trail Agency/North Coast Rail Authority)	Right of way on 506-061-008	n/a	419 Talmage Rd. Suite M Ukiah, CA 95482
California Department of Fish and Wildlife	506-061-008	n/a	619 2nd St. Eureka CA 95501
Manila CSD	400-181-006	120 Mill St. Arcata CA 95521	120 Mill St. Arcata CA 95521

Attachment 2

Adjoining Property Owners

Adjoining Property Owners, Names and Addresses

NAME	APN	ADDRESS	MAILING ADDRESS
California Dept of Fish & Wildlife	50611219	n/a	619 2nd St. Eureka CA 95501
Kenneth D & Deborah L Lankila	50607114	2183 Peninsula Dr. Arcata CA 95521	Po Bx 2323 Mckinleyville CA 95519
Jordan Obriain & Alexander Oberg-Wood	50607117	2171 Peninsula Dr. Arcata CA 95521	1817 Oldfield Ct. El Cajon CA 92019
June Ryder	50607119	2293 Peninsula Dr. Arcata CA 95521	2293 Peninsula Dr. Arcata 95521
Redwood Coast Trucking	50607110 & 50608102	2246 Peninsula Dr. Arcata CA 95521	2210 Peninsula Dr. Arcata 95521
David P & Renee Reed	50608222	2165 Peninsula Dr. Arcata CA 95521	911 Bayview St. Arcata 95521
Kristin Hollebrands-Wymer	506-071-011	2294 Peninsula Dr Arcata CA 95521	2294 Peninsula Dr. Arcata CA 95521
County of Humboldt	n/a	Young Lane	n/a
County of Humboldt	n/a	Peninsula Drive	n/a
Manila CSD	400051001	120 Mill St. Arcata CA 95521	120 Mill St. Arcata CA 95521
Kirk & Paula Brust	400031008	1930 Peerless Ave. Arcata CA 95521	1930 Peerless Ave. Arcata CA 95521

Attachment 3

Permits and Other Public Approvals

Permits & Approvals

Coastal Development Permit	Application submitted - pending
CEQA Initial Study /Mitigated Negative Declaration	Document in Public Circulation Final ISMND and NOD - pending
North Coast Regional Water Quality Control Board (Region Board) under CWA Section 401 Water Quality Certification	Application submitted - pending
U.S. Army Corps of Engineering (USACE) Clean Water Act (CWA) Section 404	Application submitted - pending

Attachment 4

Public Circulation CEQA Initial Study /Mitigated Negative Declaration

Manila Community Services District Flood Reduction and Drainage Enhancement Project

Public Circulation Initial Study & Proposed Mitigated Negative Declaration

Manila Community Services District

February 17, 2023

Public Circulation Initial Study & Proposed Mitigated Negative Declaration

Manila Community Services District Flood Reduction and Drainage Enhancement Project

Prepared for:

Manila Community Services District
1901 Park Street
Manila, CA 95521

T 707-444-3803 | **E** manilacsd1@sbcglobal.net | **manilacsd.com**

Prepared by:

718 3rd Street
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T 707-443-8326 | **E** brett.vivyan@ghd.com | **ghd.com**

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Appendices

1. Project Information

Project Title	Manila Community Services District Flood Reduction and Drainage Enhancement Project
Lead Agency Name & Address	Manila Community Services District 1901 Park Street Manila, CA 95521
Contact Person & Phone Number	Christopher Drop (707) 444-3803 manilacsd1@sbcglobal.net
Project Location	Manila, CA
General Plan Land Use Designation	Residential Low Density (RL) Public Recreation (PR) Public Facility (PF)
Zoning	Residential Single Family / Manufactured Home/ Archaeological Resource Area (RS-5-M/A) Public Facility – Urban/ Beach and Dune Areas (PF1/B) Public Recreation / Archaeological Resource Area (PR/A)

1.1 CEQA Requirements

This Project is subject to the requirements of the California Environmental Quality Act (CEQA). The lead agency is the Manila Community Services District (CSD). The purpose of this Initial Study is to analyze potential environmental impacts and provide a basis for deciding whether to prepare an Environmental Impact Report, a Mitigated Negative Declaration, or a Negative Declaration. This Initial Study is intended to satisfy the requirements of CEQA (Public Resources Code [PRC], Div 13, Sec 21000-21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). CEQA encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts.

Section 15063(d) of the State CEQA Guidelines states the content requirements of an Initial Study as follows:

1. A description of the project including the location of the project;
2. An identification of the environmental setting;
3. An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
4. A discussion of the ways to mitigate the significant effects identified, if any;
5. An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls; and
6. The name of the person or persons who prepared or participated in the Initial Study.

1.2 Background, Need, and Purpose

Manila is an unincorporated coastal community encompassing approximately 1,600 acres on the Samoa Peninsula along State Route 255 (SR-255) within Humboldt County, California (Appendix A – Figure 1). The Manila Community Services District (CSD) service area is located on the approximately half-mile wide peninsula along the north spit between Humboldt Bay and the dunes. Manila is approximately 3.5 miles directly north of Eureka and approximately five miles southwest of Arcata.

The existing drainage network lacks connectivity and sufficient capacity with single purpose fixes scattered throughout the community, without consideration of each system's reliance on the functioning of other systems owned by Manila CSD, the County of Humboldt, the Great Redwood Trail Agency (formerly North Coast Rail Authority), Caltrans, and private properties. Winter rains and shallow ground water overwhelm the existing drainage system, resulting in widespread flooding of roadways, residences, and public spaces within this severely disadvantaged community. Manila has been afflicted with chronic flooding every winter for decades. In many locations surrounding local roads and homes, there is no planned drainage whatsoever, contributing to flooding of roadways, driveways, and residences. Culverts are undersized and failing, drainage ditches lack appropriate conveyance capacity and are obstructed by debris and sediment accumulation. Many drainage paths span multiple jurisdictions, each relying on the capacity and condition of the next downstream reach.

Impacts include persistent roadway and driveway flooding from average rainfall events due to undersized and failing culverts, undersized and debris-clogged roadway ditches, and lack of connectivity between facilities. In many locations, roadside drainage facilities are entirely absent, resulting in reduced or closed travel lanes and roadway shoulders and ponding that inhibits access to residences. Roadway flooding and access limitations related to flooding impact mobility through and within Manila and create hazardous conditions for pedestrians and automobiles. Access to public infrastructure such as water meters is inhibited throughout the winter months. Flooding in some areas results in inflow to the Septic Tank Effluent Pump system posing potential risks to septic tank overflows and increasing the cost of pumping and maintaining the wastewater system. Flooding in Manila has become more severe over time as connectivity between the limited existing facilities has diminished and debris-clogged roadside ditches and failing culverts constrain hydraulic capacity

The purpose of the Project is to reduce chronic flooding and enhance drainage throughout the community of Manila, including increases to sea level rise resiliency. The 1987 Storm Drainage Master Plan by Oscar Larson & Associates (OLA 1987) identified several recommended projects and background information, that remain relevant. These projects and background information, in addition to 2018 field investigations by Manila CSD, GHD, and Cal Poly Humboldt's (formerly Humboldt State University) Capstone Engineering Class provide the basis for this community-wide approach to address persistent flooding and drainage problems caused by undersized, disconnected, and failing infrastructure. Simple solutions, consisting of vegetated bioswales, rain gardens, replacement of undersized and failing culverts, and new culverts and storm drain pipes in select locations are proposed. The Project incorporates multi-objective, multi-benefit project components that address flood reduction, ecosystem services, and resiliency to sea level rise and climate change.

1.3 Project Goals

Project goals include:

– Goal 1: Reduce flooding
– Goal 2: Climate change resiliency
– Goal 3: Enhance ecosystem services

1.4 Project Location

The Project is located in Humboldt County within the unincorporated coastal community of Manila on the Samoa Peninsula along State Route 255 (SR-255) (Appendix A – Figure 1 and Figure 2). The Manila Community Services District (CSD) service area is located on the approximately half-mile wide peninsula along the north spit between Humboldt Bay and the dunes. Manila is approximately 3.5 miles directly north of Eureka and approximately five miles southwest of Arcata. A railroad corridor owned by the Great Redwood Trail Agency (GRTA) (formerly North Coast Rail Authority or NCRA) runs parallel to SR-255 along the Samoa Peninsula.

The Project is located entirely within the Coastal Zone. Project elements span the community in five or eight distinct drainage management areas (Figure 3-1 through Figure 3-3 – Project Components):

– Drainage Management Area I – Young Lane Area

- Drainage Management Area II – Darin Road Area (no project components proposed)
- Drainage Management Area III – Ward/Mill Road Area (no project components proposed)
- Drainage Management Area IV – Lupine Drive/Park Street Area
- Drainage Management Area V – Manila Park Area (no project components proposed)
- Drainage Management Area VI – North Victor Boulevard Area
- Drainage Management Area VII – Peninsula/Victor/Raineri/Dean Area
- Drainage Management Area VIII – Peninsula Drive Area

Project elements span local, appeal, and state jurisdictions. Project elements within the local and appeal jurisdictions are regulated by the Humboldt Bay Area Local Coastal Plan and the California Coastal Commission.

The current land use within the Project Area is largely low-density residential and natural resources. The designated land-use within the Project Area includes the following: residential single family, rural residential agriculture, public facility, public recreation, railroad yards, unimproved zones, general commercial, general industrial, and natural resources including dune and wetland areas.

1.5 Project Elements

Project elements are located within the community of Manila (Appendix A – Figure 3-1 through Figure 3-3 – Project Components). Project components include:

- Bioswales: Debris blockages, sediment aggradation, and woody vegetation within existing bioswale flow paths would be removed along with minor grading to restore historical geometry. New bioswales would be graded to connect existing drainage paths. Banks of existing and new bioswales would be seeded with native species.
- Culvert replacement: existing culverts that are undersized and or failing would be replaced with new, larger capacity culverts. Where existing culverts have flap gates, flap gates would be replaced along with the culvert.
- New culverts and storm drain pipes: new culverts and storm drain pipes would be installed in select locations to connect drainage areas.
- Rain gardens: rain gardens would replace select impervious areas at the Manila Community Center and would be constructed as space allows along the roadway where conveyance to other areas is limited.
- Valley gutters: valley gutters would be installed in select locations to connect bioswales at residential driveway crossings.

Bioswales

Bioswales use open channels, as opposed to closed conduits, to carry storm water runoff. Open channel construction costs tend to be considerably lower than closed conduit construction costs. Open channels also maintain a lower average water velocity than closed conduits; this increases the time of concentration therefore also decreases the required design flow downstream and allows for infiltration along the length of the bioswale. Seeding the banks would help reduce erosion and required maintenance. Additionally, open channels allow overland flow to enter from most locations along their reach.

Debris blockages, sediment aggradation, and woody vegetation within existing bioswale flow paths would be removed along with minor grading to restore historical or stable geometry. Banks of existing and new bioswales would be seeded with native species. The drainage channels would be graded to a bottom width and side slope to convey a minimum 10-year storm and available site constraints.

Culverts, Storm Drain Pipes, & Drain Inlets

Dependent on-site constraints, it may not be feasible to use open channels, such as at driveway and roadway crossings. Culverts and storm drain pipes would use either reinforced concrete pipe (RCP) or high-density polyethylene pipe (HDPE). Both RCP and HDPE pipes would be utilized depending on the amount of cover, estimated loading, and location. When viable, HDPE would be the preferred design choice, otherwise RCP would be utilized.

Where existing culverts have flap gates, flap gates would be replaced along with the culvert. Existing flap gates prevent higher tides from propagating into the existing storm conveyance system. Culvert headwalls would be constructed to stabilize inflow and outflow locations, reduce maintenance needs, and improve visibility. All construction related to culverts and flap gates would occur during low tide. In-water work would not occur. Dewatering prior to construction would not be necessary due to the absence of surface water during construction. Dewatering of ground water would be required in select, deeper excavations. Drain inlets would be installed in select locations to convey surface drainage to storm drain pipes.

Rain Gardens

Rain gardens are landscaped depressions that function to treat on-site stormwater discharge from impermeable surfaces such as roofs, sidewalks, roadways, and parking lots. Rain gardens are beneficial in reducing overall runoff, filtering out pollutants from stormwater runoff, and providing aesthetic value. They can be filled with native plants that also provide wildlife habitat and can increase the likelihood of plant survival. Placement of a rain garden at the Manila Community Center and along Peninsula Drive in select locations would reduce overall flooding, increase infiltration, and make the areas a safer and more functional environment.

Valley Gutters

Valley gutters are a lower-cost alternative to installing new culverts in project locations that intersect residential driveways. Valley gutters would be designed so they are easily cleaned by adjacent property owners and do not impair vehicle access. The installed valley gutters would be fitted with a concrete driveway apron to limit debris blockages and protect aesthetic value. The valley gutters utilized in this project would follow the standards set by the Caltrans Highway Design Manual and/or County standards.

1.6 Drainage Management Areas

Drainage Management Area I – Young Lane Area

Drainage Management Area I (DMA I) includes the area surrounding Young Lane, portions of Hwy 255, and the northern extent of Peninsula Drive. Runoff from within DMA I is generally conveyed adjacent to the roadways from west of Hwy 255, along Young Lane and crosses under Hwy 255 and the railroad right of way before discharging to Humboldt Bay. Proposed improvements in Drainage Management Area I (DMA I) include upsizing existing culverts, a new valley gutter and debris removal and minor grading of bioswales. Project components are listed below in Table 1.6-1 and shown in Figure 3-1.

Table 1.6-1 Project Components in Drainage Management Area I

DMA ID	Improvement(s)
I-01	– N/A – as needed maintenance
I-02	– N/A – as needed maintenance
I-03	– Debris and aggraded sediment removal from existing bioswale along Young Ln.
I-04	– Debris and aggraded sediment removal from existing bioswale along Young Ln. – Minor grading of new bioswales along Peninsula Dr. – Replace existing 18-inch diameter culvert and headwalls at Young Ln. with 24-inch diameter culvert – Install (1) valley gutter and driveway apron at existing driveway crossing on Peninsula Dr.
I-05	– Debris and aggraded sediment removal from existing bioswale. – Replace existing 18-inch diameter culvert and headwalls at driveway crossing with 30-inch diameter culvert

DMA ID	Improvement(s)
	– Replace existing 18-inch diameter culvert and flap gate at railroad crossing with 30-inch dimeter culvert with flap gate – Debris removal with existing channel from railroad to salt marsh

Drainage Management Area II – Darin Road Area

Drainage Management Area II (DMA II) includes the area surrounding Stamps Lane, portions of Hwy 255, and Peninsula Drive, from Smigle Road to Phillips Court. Runoff from within DMA II is generally conveyed from west to east, and discharges to Humboldt Bay through multiple railroad right-of-way culvert crossings. This Project does not include construction or operational activities in DMA II.

Drainage Management Area III – Ward/Mill Road Area

Drainage Management Area III (DMA III) includes the area surrounding Ward Street. Runoff from within DMA III is generally conveyed from west to east, originating along the railroad right-of-way is conveyed as surface flow to Humboldt Bay without any defined stormwater conveyance system. This Project does not include construction or operational activities in DMA III.

Drainage Management Area IV – Lupine Drive/Park Street Area

Drainage Management Area IV (DMA IV) includes the area west of Hwy 255, in the vicinity of Lupin Avenue and east of Hwy 255 from Peninsula Drive to Humboldt Bay, north of the Manila Community Park. Runoff from within DMA IV is generally conveyed from west to east, originating in the Lupin Avenue are to the conveyance system along and under Hwy 255 and crosses Peninsula Drive, the railroad right-of-way, and Mill Street, then along the northern boundary of Manila Community Park to Humboldt Bay. Projects within DMA IV include replacement of culverts, removal of a culvert, debris and aggraded sediment removal from existing bioswales, and grading of a new bioswale. Project components are listed below in Table 1.6-2 and shown in Figure 3-2.

Table 1.6-2 Project Components in Drainage Management Area IV

DMA ID	Improvement(s)
IV-01	– N/A – as needed maintenance
IV-02	– Installation of (3) valley gutters with new driveway aprons at residential driveways – Debris, vegetation and aggraded sediment removal from existing bioswale
IV-03	– N/A – as needed maintenance
IV-04	– Replace existing 18-inch diameter culvert and headwalls with 30-inch diameter culvert and headwalls at Peninsula Drive – Provide maintenance to existing bioretention swales through vegetated area between residences
IV-05	– Remove 30-inch culvert in vegetated area near residential properties and grade new bioswale (IV-06). Or replace existing 30-inch culvert with new 30-inch culvert and maintain existing swale. – Debris, vegetation, and aggraded sediment removal from existing bioswale
IV-06	– Excavation of new bioswale between existing bioswales – Debris, vegetation, and aggraded sediment removal from existing bioswale
IV-07	– Debris, vegetation, and aggraded sediment removal from existing bioswale – Replace existing 18-inch diameter culverts at Mill Street and crossing near Peerless Avenue with 36-inch diameter culverts
IV-08	– N/A – as needed maintenance

Drainage Management Area V – Manila Park Area

Drainage Management Area V (DMA V) encompasses the Manila Community Park and a portion of Manila Avenue. Runoff generally flows east to west without any defined stormwater conveyance features. This Project does not include construction or operational activities in DMA V.

Drainage Management Area VI – North Victor Boulevard Area

Drainage Management Area VI (DMA VI) encompasses the northern area of Victor Boulevard between Manila Avenue and Berry Lane and the railroad right-of-way to Humboldt Bay. Runoff generally flows from west to east through a culvert crossing on Victor Boulevard to Humboldt Bay. Project components within DMA VI include a culvert replacement, new culvert, and debris removal and minor grading of bioswales. A summary of the proposed improvements for Drainage VI are listed below in Table 1.6-3 and shown in Figure 3-2.

Table 1.6-3 ***Project Components in Drainage Management Area VI***

DMA ID	Improvement(s)
VI-01	– Excavation of a new bioswale between residential properties. – New 18-inch diameter culvert to convey a portion of the drainage through the existing rail prism.
VI-02	– Replace existing 18-inch diameter culvert crossing at Victor Boulevard with 24-inch diameter culvert. – In-Line Water Quality Unit to capture fine sediment

Drainage Management Area VII – Peninsula/Victor/Raineri/Dean Area

Drainage Management Area VII (DMA VII) encompasses the area between Peninsula Drive and Hwy 255, south of Mill Street, the southern area of Victor Boulevard and the area west of Hwy 255 in the vicinity of Pacific Avenue. Runoff generally flows from north to south discharging to Humboldt Bay adjacent to the railroad right-of-way south of Manila. Projects components within DMA VII include replacement of existing culverts, addition of a storm drain pipe, and debris and vegetation removal and minor grading of existing bioswales. A summary of the project components for DMA VII are detailed below in Table 1.6-4 and shown in Figure 3-2 and Figure 3-3.

Table 1.6-4 ***Project Components in Drainage Management Area VII***

DMA ID	Improvement(s)
VII-01	– New 18-inch diameter storm drain pipe in Peninsula Drive – Excavation of bioswales along the Peninsula Drive
VII-02	– N/A – as needed maintenance
VII-03	– Replace existing 12-inch diameter culvert crossing at Peninsula Drive with 18-inch diameter culvert.
VII-04	– Replace existing 18-inch culvert with 24-inch culvert from railroad bioswale to Hwy 255 bioswale – Replace existing 18-inch diameter culvert at railroad crossing with 24-inch dimeter culvert – Debris, vegetation, and aggraded sediment removal from existing bioswale
VII-05	– N/A – as needed maintenance
VII-06	– Replace existing 24-inch diameter culvert and flap gate at railroad crossing with 36-inch dimeter culvert with flap gate
VII-07	– Installation of valley gutter or culvert at driveway crossing – New 18-inch diameter culvert crossing at Peninsula Drive – New bioswale along western edge of Peninsula Drive – Remove aggraded sediment from historical bioswale along eastern edge of Peninsula Drive
VII-08	– Remove aggraded sediment from historical bioswale along eastern edge of Peninsula Drive

DMA ID	Improvement(s)
VII-09	– Replace existing 12-inch diameter culvert on Lupin Avenue with 18-inch dimeter culvert – Debris, vegetation, and aggraded sediment removal from existing bioswale
VII-10	– Debris, vegetation, and aggraded sediment removal from existing bioswale – Replace existing 12-inch diameter culverts (2) at private drive railroad crossings with 18-inch dimeter culverts and headwalls – New 18-inch dimeter culvert and headwalls at future private drive railroad crossing
VII-11	– Replace existing 12-inch diameter culvert at private drive railroad crossings with 18-inch dimeter culverts and headwalls – Debris, vegetation, and aggraded sediment removal from existing bioswale – New 18-inch dimeter culvert and headwalls at future private drive railroad crossing

Drainage Management Area VIII – Peninsula Drive Area

Drainage Management Area VIII (DMA VIII) is located at the southernmost end of Manila and is bordered by DMA VII to the north, dune, and wetlands to the south and west, and Humboldt Bay to the east. Runoff is generally from west to east, accumulating in localized depressions without formalized storm drain conveyance systems, with the exception of drain inlets and storm drain pipes at the Manila Community Center. Project components within DMA VIII include the replacement of the existing storm drain system at the Community Center with an interactive rain garden and installation of a series of bioswales and rain gardens along the edge of Peninsula Drive. A summary of the proposed drainage improvements for Drainage Area VIII described below in Table 1.6-5 and shown in Figure 3-3.

Table 1.6-5 Project Components in Drainage Management Area VIII

DMA ID	Improvement(s)
VIII-01	– Remove existing drain inlets and pipes at Manila Community Center and replace with interactive rain garden – Replace existing 6-inch diameter storm drain pipe with 12-inch diameter storm drain pipe.
VIII-02	– Install series of rain gardens, bioswales and valley gutters along Peninsula Drive.

1.7 Project Construction

Construction Schedule

Construction would occur within a single construction season, commencing in the summer of 2024 and concluding by December 2024. If feasible, vegetation clearing outside of the nesting bird season would occur first, between August 15, 2023, and March 15, 2024. Construction would require approximately nine months, likely commencing in May. Construction may extend into 2025 if necessary.

Construction Activities and Equipment

All construction activities would be accompanied by both temporary and permanent erosion and sediment control reduction best management practices (BMPs), including but not limited to silt fencing, fiber rolls, and post-construction seeding and mulch in disturbed areas. Project construction would include the following activities:

- Mobilization of equipment and materials to the site including setting up staging areas
- Clearing, grubbing, and vegetation removal – To clear the bioswales and other work areas
- Grading/Excavation – Throughout the Project Area to remove existing pavement and achieve grade and dimensions to the new bioswales, culverts, and rain gardens
- Trenching – To install replacement and new culverts and storm drain pipes

– Paving - Along public roadways, following culvert replacement and installations where located within the roadway
– Demobilization of equipment and materials from the site including cleaning up and restoring staging areas

Equipment required for construction could include concrete trucks, concrete pump trucks, all terrain forklifts, snooper truck, compressors, tracked excavators, backhoes, graders, dump trucks, skid steers, bobcats, and pick-up trucks. Jackhammers, saws, grinders, or similar pieces of equipment may be necessary to support pavement removal. It is not anticipated that any temporary utility extensions, such as electric power or water, would be required for construction. Water from legal sources would be used for dust control, compaction, and re-vegetation. In-water work, channel dewatering, and fish relocation are excluded from this project.

Construction Access

The Project Area would be accessed via SR-255, Peninsula Drive, and auxiliary streets. No new access roads would need to be constructed in order to implement the Project.

Stockpiling and Staging

Stockpiling and staging would occur within existing uplands and disturbed areas of the Project Area. Areas include roadway shoulders and paved areas or graveled areas at Manila Community Park, Manila Community Center, and the CSD Office (Appendix A Figure 3-2 and Figure 3-3). Within the stockpiling and staging area, BMPs would be utilized to control erosion and prevent sediment and hazardous materials from impacting the environment.

Excess soils, aggregate road base, and construction materials would be stored on site within designated stockpiling and staging areas described above. Excess materials may be re-used on site for backfill and finished grading. Excess materials would not be stockpiled on-site once the Project is complete. The contractor would haul additional excess materials off site for beneficial re-use, recycling, or legal disposal.

Establish Exclusion Areas and Erosion Control

Except for areas that would be unavoidably impacted during construction, identified sensitive resource areas to be protected would be excluded with protective fencing or signage prior to construction. Erosion control would also be installed prior to precipitation (e.g., silt fencing or fiber rolls).

Vegetation Removal

Vegetation removal would include mowing and brush removal. Tree removal may also be required. Vegetation removal would be timed to avoid potential impacts to nesting birds and bats to the greatest extent feasible.

Grading and Fill

Minor grading would need to occur at culvert replacement sites, for the installation of drain inlets and pipes, for rain gardens, and at select bioswales to restore historical or stable geometry. Permeable aggregate and bioretention soil media would be placed at rain garden sites. Structural fill would be placed and compacted at culvert, headwall, storm drain pipe, and drain inlet sites.

Traffic and Access Control

Temporary lane closures on Young Lane, Peninsula Drive, Mill Street, and Victor Boulevard may be required. Temporary lane closures would follow County requirements for temporary roadway closures, including signage, public noticing, and compliance with the California Manual on Uniform Traffic Control Devices (CA MUTCD) requirements.

Groundwater Dewatering

If needed, temporary groundwater dewatering would involve pumping water out of a trench or excavation. Groundwater would typically be pumped to a settling pond, Baker tanks (or other similar type of settling tank), or into a dewatering bag. Dewatering water may also be percolated back into the ground (in uplands). Discharge to regulated waters would not occur.

1.8 Site Restoration and Closure

Following construction, the contractor would demobilize and remove equipment, supplies, and construction wastes. The disturbed areas would be restored to pre-construction conditions or stabilized with a combination of grass seed (broadcast or hydroseed), straw mulch, rolled erosion control fabric, and other plantings/revegetation. Revegetation would include replanting and any potential compliance monitoring in support of mitigation required by resource agencies for impacts to regulated habitats such as wetlands, Environmentally Sensitive Habitat Areas (ESHA), or Sensitive Natural Communities.

1.9 Maintenance and Operation

Following construction, drainage system infrastructure would be maintained and operated by the Manila CSD. The Project has been designed to minimize long-term operational and repair costs.

Bioswale maintenance would include regular clearing of debris from culvert inlets, occasional removal of sediment, and annual maintenance of vegetation. The Manila CSD would follow County, GRTA/NCRA and Caltrans processes for maintenance requests as well as develop a method for completing maintenance if these entities are unable to complete maintenance in a timely manner.

Maintenance of RCP and HDPE pipes would include occasional cleanout of sediment and other debris. Manila CSD would follow County, GRTA/NCRA and Caltrans processes for maintenance requests as well as develop a method for completing maintenance if these entities are unable to complete maintenance in a timely manner.

1.10 Regulatory Permits, CEQA, and NEPA

Manila Community Services District is the CEQA lead agency for the Project. An Initial Study/Proposed Mitigated Negative Declaration is the proposed CEQA pathway.

The Project Area is within the County and State Jurisdiction of the Coastal Zone. A consolidated coastal development permit would be required from the California Coastal Commission.

A wetland delineation has been completed for the Project (Appendix C). The Project would impact three-parameter wetlands; therefore, permits from the U.S. Army Corps of Engineering (USACE) under Section 404 of the Clean Water Act (CWA), and a corresponding Water Quality Certification from the North Coast Regional Water Quality Control Board (Region Board) under Section 401 of the CWA would be required. Impact analysis specific to one- and three-parameter wetlands can be found in the CEQA IS/MND and Wetland Delineation (Appendix C) prepared for the Project.

The Project does not involve any waterways or impacts to riparian habitat; thus, a Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife would not be required. Similarly, the Project is not expected to require consultation with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service/NOAA Fisheries, as potential impacts to federal special status plants, fish, or wildlife species are not anticipated.

2. Environmental Protection Actions Incorporated into the Project

The following actions are included as part of the Project to reduce or avoid potential adverse effects that could result from construction or operation of the Project. Mitigation measures are presented in the following analysis in Section 4

– Environmental Analysis. Environmental protection actions and mitigation measures, together, would be included in a Mitigation Monitoring and Reporting Program at the time that the Project is considered for approval.

2.1 Environmental Protection Action 1 – Stormwater Pollution Prevention Plan (SWPPP)

The Project will obtain coverage under State Water Resources Control Board (Water Board) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities. The Project will submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the Water Board. The SWPPP will address pollutant sources, best management practices, and other requirements specified in the Order. The SWPPP will include erosion and sediment control measures, and dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner will oversee implementation of the Project SWPPP, including visual inspections, sampling, and analysis, and ensuring overall compliance.

2.2 Mitigation, Monitoring, and Reporting Program

The Mitigation, Monitoring, and Reporting Program (MMRP) for this Initial Study/Mitigated Negative Declaration (ISMND) is included in Appendix F. The MMRP includes a summary of all environmental protection actions and mitigation measures, and how each action and mitigation measure would be implemented to ensure all potential impacts associated with the Project would result in a less than significant environmental impact.

2.3 Tribal Consultation

The Manila CSD sent out requests for consultation of proposed Projects from California Native American tribes pursuant to Public Resources Code Section 21080.3.1. Under Assembly Bill (AB) 52, notification letters were sent to the Wiyot Tribe, Blue Lake Rancheria, and the Bear River Band of the Rohnerville Rancheria on November 2, 2022. Consultation occurred with the Bear River Band of the Rohnerville Rancheria on December 12, 2022 and was concluded on December 30, 2022. The tribes' requests have been incorporated into Section 4.17. The Wiyot Tribe and the Blue Lake Rancheria did not respond within 30 days.

3. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages:

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

DETERMINATION (To be completed by the Lead Agency)

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 would be prepared.

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

☐ I find that the proposed 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 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 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.

______________________________ 02/17/2023

Christopher Drop, General Manager Date

4. Environmental Analysis

4.1 Aesthetics

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

Views within the Project Area are limited to bioswales, roadside vegetation, State Route 255, the Manila Community Center, and adjacent residences and are not considered to have exceptional scenic quality. Views of dunes, dune vegetation (e.g., willows), and Humboldt Bay are visible from some locations in Manila.

a) Have a substantial adverse effect on a scenic vista? (No Impact)

A scenic vista can generally be defined as a view that has remarkable scenery or a broad or outstanding view of the natural landscape. The Humboldt County General Plan identifies scenic vistas from US 101, beaches, state parks, and coastal access points. There are no scenic vistas in the Project Area. Additionally, views of dunes and Humboldt Bay, visible from some locations in Manila, would not be altered. Therefore, construction and operation of the Project would have no effect on scenic vistas. No impact would result.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (No Impact)

The Project is not located on, near, or within view of a state scenic highway (Caltrans 2019). No impact would result.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view of the site and its surroundings? (Public Views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? (No Impact)

Proposed actions would not conflict with zoning and other regulations governing scenic quality within Humboldt County. The proposed Project would maintain the visual character of the area by clearing debris blockages, sediment aggradation, and woody vegetation within existing bioswale flow paths with minor grading to restore historical or stable geometry. It would also create new bioswales, and the banks of existing and new bioswales would be seeded and planted with native species. The Project does not include any tall visual elements that would block or screen public views. No impact would result.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (No Impact)

The Project does not include any new streetlights or other lighting elements. Night-time construction would not occur. No proposed Project elements would cause substantial new sources of glare. No impact would result.

4.2 Agriculture and Forest Resources

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

The Project Area is along the Samoa peninsula within the community of Manila. There are no agricultural or forestry land uses within the Project Area.

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland)? (No Impact)

The Department of Conservation (DOC)'s Farmland Mapping and Monitoring Program has not been completed for Humboldt County. Therefore, lands within the Project Area have not been formally analyzed by the DOC to determine if they meet the criteria for being designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

For this analysis, “Agricultural Soils” and “Prime Agricultural Soils” designations via the Humboldt County WebGIS online mapping tool were utilized, which utilizes soils data from the Natural Resources Conservation Service (NRCS). According to the Humboldt County WebGIS, the Project Area does not include Agricultural Soils or Prime Agricultural Soils (Humboldt County 2023a). The Project would not remove agricultural land from production or result in a change in land use, as there is no such land presently under agricultural use within the Project Area. No impact would result.

b) Conflict with Agricultural Zoning or Williamson Act Contract? (No Impact)

There are no agricultural zoning or active Williamson Act contracts within the Project Area. Zoning within the Project Area is discussed in Section 4.10 (Land Use and Planning). Therefore, construction and operation of the Project would have no effect on agricultural zoning or Williamson Act contracts because none exist within the Project Area. No impact would result.

c, d) Conflict with Forest Land Zoning or Convert Forest Land? (No Impact)

There are no forest lands, timberland, or land zoned Timberland Production in the Project Area; therefore, no forest land or timberland would be converted to non-forest or non-timberland use. Zoning within the Project Area is discussed in Section 4.10 (Land Use and Planning). No impact would result.

e) Convert Farmland or Forest? (Less than Significant Impact)

The Project may include the removal of some small coastal trees; however, the trees that would be removed are coastal species (e.g., willow) and not considered a forest resource. Potential biological impacts associated with tree removal are discussed in Section 4.4 (Biological Resources). There are no other changes in the existing environment caused by the Project that would impact farmland or forest land in or adjacent to the Project Area. A less than significant impact would result.

4.3 Air Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?		X		
b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?		X		
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

The Project is located within the Humboldt County portion of the North Coast Air Basin (Air Basin) which is managed by the North Coast Unified Air Quality Management District (NCUAQMD). The NCUAQMD monitors air quality, enforces local, State, and federal air quality regulations for counties within its jurisdiction, inventories and assesses the health risks of Toxic Air Contaminants (TACs), and adopts rules that limit pollution.

For construction emissions, the NCUAQMD has indicated that emissions are not considered regionally significant for projects whose construction would be relatively short in duration, lasting less than one year. For Project construction lasting more than one year or involving above average construction intensity in volume of equipment or area disturbed, construction emissions may be compared to the stationary source thresholds (NCUAQMD 2019). Construction would occur in one season and would occur in 2024. Emissions related to construction were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 and are discussed below (also see Appendix B – CalEEMod Modeling Information and Results).

a) Conflict with or obstruct implementation of the applicable air quality plan? (Less Than Significant with Mitigation)

This impact relates to consistency with an adopted attainment plan. The NCUAQMD is responsible for monitoring and enforcing local, State, and federal air quality standards. Humboldt County is designated ‘attainment’ for all National Ambient Air Quality Standards. With regard to the California Ambient Air Quality Standards, Humboldt County is designated attainment for all pollutants except PM_{10}. Humboldt County is designated as “non-attainment” for the State’s PM_{10} standard.

PM_{10} refers to inhalable particulate matter with an aerodynamic diameter of less than 10 microns. PM_{10} includes emission of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} emissions include unpaved road dust, smoke from wood stoves, construction dust, open burning of vegetation, and airborne salts and other particulate matter naturally generated by ocean surf. Therefore, any use or activity that generates airborne particulate matter may be of concern to the NCUAQMD. The proposed Project would create PM_{10} emissions in part through vehicles coming and going to the Project Area and the construction activity associated with the Project.

To address non-attainment for PM_{10}, the NCUAQMD adopted a Particulate Matter Attainment Plan in 1995. This plan presents available information about the nature and causes of PM_{10} standard exceedances and identifies cost-effective control measures to reduce PM_{10} emissions to levels necessary to meet California Ambient Air Quality Standards. However, the NCUAQMD states that the plan, “should be used cautiously as it is not a document that is required in order for the District to come into attainment for the state standard" (NCUAQMD 2021). Therefore, compliance with applicable NCUAQMD PM_{10} rules is applied as the threshold of significance for the purposes of analysis. NCUAQMD Rule 104 Section D, Fugitive Dust Emissions, is applicable to the Project.

Rule 104, Section D – Fugitive Dust Emissions is used by the NCUAQMD to address non-attainment for PM_{10}. Pursuant to Rule 104 Section D, the handling, transporting, or open storage of materials in such a manner, which allows or may allow unnecessary amounts of particulate matter to become airborne, shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to covering open bodied trucks when used for transporting materials likely to give rise to airborne dust and the use of water during the grading of roads or the clearing of land. During earth moving activities, fugitive dust (PM_{10}) would be generated. The amount of dust generated at any given time would be highly variable and is dependent on the size of the area disturbed at any given time, amount of activity, soil conditions, and meteorological conditions. Unless controlled, fugitive dust emissions during construction of the shared use pathway could be a potentially significant impact, therefore, Mitigation Measure AQ-1 would be incorporated to comply with NCUAQMD's Rule 104 Section D.

Operation of the Project would not include the handling, transporting, or open storage of materials in which particulate matter may become airborne. Due to the absence of handling, transport, or open storage of materials that would generate particulate matter, operation of the Project is not expected to conflict with NCUAQMD's Rule 104 Section D. No impact from operation of the Project would result.

Mitigation

Implementation of Mitigation Measures AQ-1 would reduce the potential impact related to PM_{10} fugitive dust by requiring BMP measures.

Mitigation Measure AQ-1: Measures to Reduce Air Pollution

The contractor shall implement the following measures during construction:

- All exposed surfaces (e.g., staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered two times per day or as required by site conditions and current weather patterns.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using street sweepers at least once per day, or as needed to alleviate dust and debris on the roadway.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures.
- All areas to be paved shall be completed as soon as possible.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes.
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications.

With implementation of Mitigation Measure AQ-1, the Project would not conflict with applicable air plans. This impact would be reduced to a less-than-significant level with mitigation.

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

The Project's potential to generate a significant amount of criteria pollutants of concern during Project construction and operation is assessed in this Section. As noted above, Humboldt County is designated nonattainment of the State's PM10 standard. The County is designated attainment for all other state and federal standards. Potential impacts of concern will be exceedances of State or federal standards for PM_{10}. Localized PM10 is of concern during construction because of the potential to emit fugitive dust during earth-disturbing activities.

Construction

Localized PM_{10}

The Project would include clearing and grubbing, grading, and paving activity. Generally, the most substantial air pollutant emissions would be dust generated from site clearing and grubbing, and grading. If uncontrolled, these emissions could lead to both health and nuisance impacts. Construction activities would also temporarily generate emissions of equipment exhaust and other air contaminants. The Project's potential impacts from equipment exhaust are assessed separately below.

The NCUAQMD does not have formally adopted thresholds of significance for fugitive, dust-related particulate matter emissions above and beyond Rule 104, Section D which does not provide quantitative standards. For the purposes of analysis, this document uses the Bay Area Air Quality Management District (BAAQMD) approach to determining significance for fugitive dust emissions from Project construction. The BAAQMD bases the determination of significance for fugitive dust on a consideration of the control measures to be implemented. If all appropriate emissions control measures recommended by BAAQMD are implemented for a project, then fugitive dust emissions during construction are not considered significant. BAAQMD recommends a specific set of "Basic Construction Measures" to reduce emissions of construction-generated PM10 to less than significant. Without incorporation of these Basic Construction Measures, the Project's construction-generated fugitive PM_{10} (dust) would result in a potentially significant impact.

The Basic Construction Measure controls recommended by the BAAQMD are incorporated into Mitigation Measure AQ-1. These controls are consistent with NCUAQMD Rule 104 Section D, Fugitive Dust Emission and provide supplemental, additional control of fugitive dust emissions beyond that which would occur with Rule 104 Section D compliance alone. Therefore, with incorporation of Mitigation Measure AQ-1, the Project would result in a less than significant impact for construction-period PM_{10} generation and would not violate or substantially contribute to an existing or projected air quality violation.

Construction Criteria Pollutants

The NCUAQMD does not have established CEQA significance criteria to determine the significance of impacts that would result from projects such as the proposed Project; however, the NCUAQMD does have criteria pollutant best available control technology (BACT) thresholds for new or modified stationary source projects proposed within the NCUAQMD's jurisdiction. For construction emissions, the NCUAQMD has indicated that emissions are not considered regionally significant for projects whose construction would be of relatively short duration, lasting less than one year. NCUAQMD has indicated that it is appropriate for lead agencies to compare proposed construction emissions that last more than one year to its BACT thresholds for stationary sources identified in Rule 110(E)(1), which are:

– Nitrogen Oxides – 40 tons per year
– Reactive Organic Gases – 40 tons per year
– PM_{10} – 15 tons per year
– Carbon Monoxide – 100 tons per year.

CalEEMod version 2020.4.0 was used to estimate air pollutant emissions from Project construction (Appendix B). Construction of the Project is expected to begin in 2024 and would be completed within one construction season. Detailed material hauling volumes were provided by the Project's Design Team. The Project's estimated construction emissions are provided in Table 4.3-1 and 7.3-2 for annual and daily emission rates, respectively. As shown in the tables, the Project would not exceed the NCUAQMD's thresholds of significance. Therefore, the Project's construction emissions are considered to have a less than significant impact.

Table 4.3-1 Annual Construction Regional Pollutant Emissions

Parameter	Annual Emissions (tons/year)			
	ROG	NOx	CO	PM10
Project Construction (2024)	<0.1	0.3	0.2	<0.1
NCUAQMD Stationary Source Thresholds	40.0	40.0	100	15.0
Significant Impact?	No	No	No	No

Table 4.3-2 Daily Construction Regional Pollutant Emissions

Parameter	Average Daily Emissions (pounds/day)			
	ROG	NOx	CO	PM10
Project Construction (2024)	0.8	7.3	6.9	2.1
NCUAQMD Stationary Source Thresholds	50.0	50.0	500.0	80.0
Significant Impact?	No	No	No	No

Operation

Following construction, the Project would not include any stationary sources of air emissions. Vehicle trips associated with operation and maintenance of the proposed Project would include maintenance and monitoring as described in the Project Description and would be consistent with the existing maintenance and monitoring of the existing stormwater infrastructure. The Project would not result in substantial long-term operational emissions of criteria air pollutants. Therefore, Project-generated operational emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment. The Project's contribution to a cumulative impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations? (Less Than Significant)

Activities occurring near sensitive receptors should receive a higher level of preventative planning. Sensitive receptors include school-aged children (schools, daycare, playgrounds), the elderly (retirement community, nursing homes), the infirm (medical facilities/offices), and those who exercise outdoors regularly (public and private exercise facilities, parks). Sensitive receptors adjacent to the Project Area include residential uses and the Manila Community Center, which serves as a school during the academic year.

Project construction activities would occur over one construction season. Project construction is not expected to include intensive or prolonged construction equipment use for a long duration. Additionally, equipment use would be spread out over a linear project alignment, further reducing the duration of equipment use near individual receptor locations. Due to the short duration (no one area of prolonged or intense construction activity), the Project would not result in the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, the potential construction-related impact would be less than significant.

Following construction, the Project would not include any stationary sources of air emissions or new mobile source emissions that would result in substantial long-term operational emissions of criteria air pollutants. Therefore, Project operation would not expose nearby sensitive receptors to substantial levels of pollutants. The potential operation-related impact would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (Less Than Significant)

Implementation of the Project would not result in major sources of odor. The Project type is not one of the common types of facilities known to produce odors (i.e., landfill, coffee roaster, wastewater treatment facility, etc.). Minor odors from the use of equipment during construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. Thus, the Project would not create objectionable odors affecting a substantial number of people. The impact would be less than significant.

4.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
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?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?				X

A Wetland Delineation, Botanical and Sensitive Natural Community Assessment Memorandum (Botanical Report), and Wildlife Habitat Assessment Memorandum (Wildlife Assessment) were prepared to assess baseline environmental conditions within the Project Area and are included as Appendix C, D, and E, respectively. These studies evaluate the potential for any special status plants, wildlife species, or any sensitive natural communities (SNCs) or aquatic resources to occur. The BSA, or the area directly or indirectly impacted by the proposed Project, encompasses a 0.25-mile radius around the Project Area.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (Less Than Significant with Mitigation)

Special-status Plant Species

Special status plant species include those listed as endangered, threatened, or as candidate species by the CDFW, under the California Endangered Species Act (CESA), and/or under the federal Endangered Species Act (ESA). Plant species on the California Native Plant Society's California Rare Plant Ranking (CRPR) Lists 1A, 1B and 2A and 2B are also considered eligible for State listing as endangered or threatened pursuant to the California Fish and Game Code (FGC); the CDFW has oversight of these special status plant species as a trustee agency. As part of the CEQA process, such species should be considered, as they meet the definition of Threatened or Endangered under Sections

2062 and 2067 of the California FGC. There are occasions where CRPR List 3 or 4 species might be considered of special concern particularly for the type locality of a plant, for populations at the periphery of a species range, or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology.

Three seasonally appropriate floristic surveys for special status plants were conducted in the Project Area for special status plant species and vegetation assessments during the spring and summer of 2022 (May 3 and 4, and July 26).

Based on occurrence records and habitat availability, four special status plants have a high probability of occurring in the BSA. Lyngbye's sedge (*Carex lyngbyei*) has a CRPR of 2B.2, Humboldt Bay owl's-clover (*Castilleja ambigua var. humboldtiensis*) has a CRPR of 1B.2, Point Reyes salty bird's-beak (*Chloropyron maritimum ssp. Palustre*) has a CRPR of 1B.2, western sand-spurrey (*Spergularia canadensis var. occidentalis*) has a CRPR of 2B.1. One special status specie, Lyngbye’s sedge, was observed in the BSA in an area planned for debris, vegetation, and aggraded sediment removal from the existing bioswale, leading to a potentially significant impact.

Two additional special status species were observed immediately outside the BSA: Humboldt Bay owl’s-clover and Point Reyes salty bird’s-beak. Twenty-four additional special status species have a low likelihood of occurring within the Project Area (Appendix D). With a special status plant occurring within the BSA, a potentially significant impact could occur.

Mitigation

Implementation of Mitigation Measure BIO-1 would reduce the potential impact to special status plants.

Mitigation Measure BIO-1: Protect Special Status Plants

Avoidance and minimization measures for special status plant species are addressed collectively for all species. The following measures are recommended:

- The locations of any special status plant populations mapped herein shall be clearly identified in the contract documents (100% design plans and final specifications) if they occur within or adjacent to the grading boundary.
- If special status plant populations are detected where construction will have unavoidable impacts, seed will be collected prior to construction by a qualified botanist and redistributed following construction during the appropriate season. On-site seed collection from the impacted species will be prioritized. If on-site seed collection is infeasible due to blooming period conflicts with the planned construction season, off-site seed collection will occur from a suitable nearby area.

Mitigation Measure BIO-1 requires practicable avoidance and protection measures for special status plants during construction, thereby reducing any potential impacts. With the implementation of Mitigation Measure BIO-1, potential impacts to special status plants would be less than significant.

Special Status Mammals

A reconnaissance-level site visit was on May 24, 2022. No special status mammal species were observed in the Project Area during reconnaissance level surveys or technical surveys. The Wildlife Assessment identified two special status mammals that have a moderate potential to occur within or directly adjacent to the BSA. The Townsend’s Big-eared Bat (*Corynorhinus townsendii*) and the Long-eared Myotis (*Myotis evotis*) have been detected adjacent to the BSA (Appendix E). The BSA provides suitable roosting and foraging habitat for special status bats. Vegetation removal would include mowing and brush removal. Tree removal may also be required. Therefore, a potentially significant impact could occur.

Mitigation

Implementation of Mitigation Measure BIO-2 would reduce the potential impact to special status mammals.

Mitigation Measure BIO-2: Protect Special Status Bats

Removal of confirmed or presumed-occupied bat roost habitat will occur only during seasonal periods of bat activity (when bats are volant, i.e., able to leave roosts) between March 1 and April 15 or September 1 and October 15, when evening temps rise above 45 F, and when no rainfall greater than ½ inches has occurred in the last 24 hours.

If trees or structures cannot be removed during the volant period, i.e., Project activities occur during the bat maternity season which generally occur April 16th through August 30th, the Manila CSD's qualified biologist shall conduct surveys within suitable habitat for special status bats. Survey methodology shall include visual examination with binoculars and may optionally utilize ultrasonic detectors to determine if special status bat species utilize the vicinity.

Surveys shall be conducted by a qualified biologist within seven days prior to construction in any areas where potential maternity roosts may be disturbed/removed. The preconstruction surveys for bats may coincide with pre-construction surveys for other animals. Surveys shall include a visual inspection of the impact area and any large trees/snags with cavities or loose bark or crevices within infrastructure. If the presence of a maternity roost is confirmed, an appropriate buffer distance will be established in consultation with CDFW to ensure that construction noise will remain below disturbance thresholds for bats. If no bat utilization or roosts are found, then no further study or action is required. If bats are found to utilize the BSA, or presence is assumed, a bat specialist should be engaged to advise the best method to prevent impact.

Project-related lighting shall be minimized if any construction occurs at night, either contained within structures or limited by appropriate reflectors or shrouds and focused on areas needed for safety, security or other essential requirements.

Mitigation Measure BIO-2 requires practicable avoidance and protection measures for special status bats during construction, thereby reducing any potential impacts. With the implementation of Mitigation Measure BIO-2, potential impacts to special status bats would be less than significant.

Special Status, Migratory, and Nesting Birds

A reconnaissance-level wildlife site visit was conducted on May 24, 2022. One special status bird Great Egret (*Ardea alba*) was observed flying over the study area. The Wildlife Assessment identified ten special status birds, including one state endangered (SE) and one state threatened (ST), that were found to have a moderate or high potential to occur within the BSA, either for foraging or nesting, or both (Appendix E).

- Great Egret (*Ardea alba*) – present
- Great Blue Heron (*Ardea herodias*) – moderate potential (foraging, nesting),
- Northern Harrier (*Circus hudsonius*) – moderate potential (foraging, nesting),
- Snowy Egret (*Egretta thula*) – moderate potential (foraging),
- White-tailed Kite (*Elanus leucurus*) – moderate potential (foraging, nesting),
- Bald Eagle (*Haliaeetus leucocephalus*, SE) – moderate potential (foraging),
- Double-Crested Cormorant (*Nannopterum auritum*) – moderate potential (foraging),
- Black-Crowned Night Heron (*Nycticorax nycticorax*) – moderate potential (foraging),
- Osprey (*Pandion haliaetus*) – moderate potential (foraging),
- Bank Swallow (*Riparia riparia*, ST) – moderate potential (foraging),

If special status and/or native migratory birds are nesting in the BSA, or within 500 feet during construction activities, these special status and protected migratory birds could be injured or killed via clearing and grubbing of vegetation or limbing and removal of trees, and/or potentially displaced from habitat, resulting in a potentially significant impact.

Mitigation

Implementation of Mitigation Measure BIO-3 would reduce the potential impact to special status and protected migratory and nesting birds.

Mitigation Measure BIO-3: Protect Special Status, Migratory, and Nesting Birds

Ground disturbance and vegetation clearing will be conducted, where feasible, during the fall and/or winter months and outside of the avian nesting season (which is generally assumed to occur between March 15 – August 15) to avoid any direct effects to special-status and protected birds. Ground disturbance and vegetation clearing that cannot be confined to the fall and/or winter outside of the nesting season, will require that a qualified biologist conduct pre-construction surveys within the vicinity of the BSA, to check for nesting activity of native birds and to evaluate the site for presence of raptors and special status bird species. The biologist will conduct at minimum a one-day pre-construction survey within the seven-day period prior to vegetation removal and ground-disturbing activities. If ground disturbance and vegetation removal work lapses for seven days or longer during the nesting season, a qualified biologist will conduct a supplemental avian pre-construction survey before Project work is reinitiated.

If active nests are detected within the construction footprint, or within 500 feet of construction activities, the biologist will flag a buffer around each nest. Construction activities will avoid nest sites until the biologist determines that the young have fledged, or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers will be implemented as needed. In general, the buffer size for common species will be determined on a case-by-case basis in consultation with the CDFW and, if applicable, with USFWS. Buffer sizes will take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds.

If active nests are detected during the survey, the qualified biologist will monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified biologist, disturb nesting activities (e.g., excessive noise), will be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified biologist will immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise sensitive receptors.

With the implementation of Mitigation Measure BIO-3, potential impacts to special status and protected migratory birds would be less than significant.

Special-status Amphibian and Reptile Species

No special status amphibian or reptile species were observed in the Project Area during reconnaissance level surveys on May 24, 2022; however, focused herpetological surveys were not conducted in the Project Area. The Wildlife Assessment (Appendix E) notes that suitable habitat for Northern Red-legged Frogs (*Rana aurora*) is present in the Project Area, and that the species has a moderate potential to be present during construction. If present in the Project Area during construction activities, Northern Red-legged Frogs could be injured or killed via crushing, entrapment, or burying (related to ground disturbance), and/or potentially displaced from habitat, resulting in a potentially significant impact.

Mitigation

Implementation of Mitigation Measure BIO-4 would reduce the potential impact to Northern Red-legged Frogs.

Mitigation Measure BIO-4: Protect Northern Red-legged Frogs

The Manila CSD will retain a qualified biologist to perform a pre-construction survey for the Northern Red-legged Frog within seven days prior to commencement of ground disturbance. The survey will be limited to the Project footprint and within 50 feet of suitable habitat. The biologist will relocate any specimens that occur within the work-impact zone to nearby suitable habitat. If a Northern Red-legged Frog is observed in an active construction zone, the contractor will halt construction activities in the area and the frog will be moved to a safe location in similar habitat outside of the construction zone. Construction within areas of standing water will be limited to the period of the year between July 1 and October 30 to avoid disturbance to breeding frogs. After July 1, a qualified biologist will inspect any work areas containing surface water (not including puddles resulting from rainfall) to ensure tadpoles or metamorphosing frogs are not present. If they are present, the qualified biologist will implement a rescue and relocation operation to move any tadpoles or metamorphosing frogs to a safe location in nearby suitable habitat.

Mitigation Measure BIO-4 requires practicable avoidance and protection measures for Northern Red-legged Frogs during construction, thereby reducing any potential impacts. With the implementation of Mitigation Measure BIO-4, potential impacts to the Northern Red-legged Frogs would be less than significant.

Special Status Fish

No special status fish species or aquatic habitat that could support fish species are present within the Project Area. However, small portions of the BSA intersect with the Humboldt Bay, which is federally-designated Essential Fish Habitat for Groundfish, coastal pelagic species, Coho Salmon, and Chinook Salmon. More specifically, the DMA IV portion of the BSA near the Manila Community Park extends approximately 100 feet into the Humboldt Bay (Appendix A – Figure 3-2). However, no work is proposed in Humboldt Bay.

The BSA includes the shoreline margin of Humboldt Bay. All construction related to culverts and flap gates would occur during low tide. In-water work would not occur. Dewatering prior to construction would not be necessary due to the absence of water during construction. As a result, the potential for aquatic species to occur is avoided. The potential to impact special status aquatic species would be limited to indirect water quality impairments, which will be controlled with erosion control protocols during ground disturbance required under Environmental Protection Action 1 (SWPPP). If construction inadvertently encroached into Humboldt Bay, a potentially significant impact could occur to special status fish. There, Mitigation Measure BIO-5 has been incorporated into the Project.

Mitigation

Implementation of Mitigation Measure BIO-5 would reduce the potential impact to Special Status Fish.

Mitigation Measure BIO-5: Protect Special Status Fish

The following shall be implemented by Manila CSD to protect special status fish:

- Temporary exclusion fencing will be installed along the shoreline near planned areas of ground disturbance, if any, to limit inadvertent disturbance near aquatic habitat. The temporary exclusion fencing will be shown in the final 100% construction plan set.
- Equipment maintenance or refueling will not occur within 100 feet of the Humboldt Bay shoreline.
- Erosion control shall be installed for work in tidal drainages to avoid post-construction turbidity inputs into Humboldt Bay. Erosion control measures shall be shown on the final 100% design planset.
- Dewatering of aquatic habitat shall not occur.
- Fish relocation shall not occur.

Mitigation Measure BIO-5 requires practicable avoidance and protection measures for special status fish during construction, thereby reducing any potential impacts. With the implementation of Mitigation Measure BIO-5, potential impacts to special status fish would be less than significant.

Special Status Invertebrates

One special status invertebrate, the Western Bumble Bee (*Bombus occidentalis*), was observed in the Project Area during the reconnaissance level survey. However, only limited patches of nectar plants needed for foraging are present within the BSA. Although the Project Area falls within the species pre-2002 range for the Western Bumble Bee, the range has contracted significantly in the last decade and now only includes the intermountain west and cascade regions of the US, this species is now regionally rare. The species is not federally or state listed. However, the Western Bumble Bee has a State Rank of 1, which indicates it is critically imperiled (Appendix E). Thus, due to ground disturbances from the Project, a potentially significant impact could occur.

Mitigation

Implementation of Mitigation Measure BIO-6 would reduce the potential impact to the special status Western Bumble Bee.

Mitigation Measure BIO-6: Protect Western Bumble Bee

If an occupied Western Bumble Bee nest is observed in an active construction zone, the contractor will halt construction activities surrounding the area. A biologist will observe the nest and a buffer would be established to protect the occupied nest.

Mitigation Measure BIO-6 requires actions to halt construction if a Western Bumble Bee is observed, thereby reducing any potential impacts. With the implementation of Mitigation Measure BIO-6, potential impacts to special status invertebrates would be less than significant.

b, c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community, or state or federally protected wetlands? (Less Than Significant with Mitigation)

While the dominant vegetation within the Project Area is non-native sweet vernal grass (*Anthoxanthum odoratum*) and other invasive plant species, the Project Area contains SNCs, Environmentally Sensitive Habitat Areas (ESHA), and wetlands (Appendix C and D). SNCs are habitats and plant communities so designated by the CDFW and listed in the Sensitive in the CNDDB and on the California Sensitive Natural Communities List. The SNCs are broken down to alliance and association levels for vegetation types affiliated with ecological sections in California. The CDFW considers alliances and associations with a state rank of S1 to S3 to be Sensitive. The BSA contains several vegetation communities which are considered SNCs and may also be considered ESHA. However, all SNCs and potential ESHA present are also considered one- or three-parameter wetlands in the Coastal Zone and were not further evaluated or mapped. SNCs present are briefly summarized below (Table 4.4-1); however, these areas were also within one- or three-parameter wetlands and were mapped and classified as wetlands.

Table 4.4-1 Sensitive Natural Communities in the Biological Study Area

Habitat Type	Global Rank[1]	State Rank[1]	Characteristic species[1]
Lyngbye's sedge swathes	GNR	S1	*Carex lyngbyei*
Pickleweed mats	G4	S3	*Sarcocornia pacifica (Salicornia depressa)*
Hardstem and California bulrush marshes	G4	S3	*Schoenoplectus californicus*
Coastal dune willow thickets	G4	S3	*Salix hookeriana* is dominant in the low tree canopy with *Baccharis pilularis, Morella californica, Rubus* spp., and *Salix lasiolepis*

Habitat Type	Global Rank[1]	State Rank[1]	Characteristic species[1]
Salmonberry – Wax myrtle scrub	G5	S3	*Morella californica* is dominant in the shrub canopy with *Rubus ursinus* in the understory. No *Rubus spectabilis* is present in the BSA.
Salal-berry brambles: *Rubus ursinus* association		Sensitive	*R. ursinus* dominant in the shrub canopy

Footnotes:

[1] Characteristic species and rankings from A Manual of California Vegetation (Sawyer et al. 2009).

Column Header Categories and Abbreviations:

Global Rank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2021 (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. (NatureServe 2022

State Rank: State Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of imperilment in the state (California) – S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

Wetland delineations were completed for the Project on July 21-22 and August 23, 2022, to determine the extent of wetlands and other waters within the Project Area based on hydrophytic vegetation, hydric soils, and wetland hydrology using methods and indicators outlined in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region. The Project Area falls within the Coastal Zone; thus three-parameter and one-parameter wetlands were documented.

The BSA broadly contains four types of three-parameter wetlands, and one large one-parameter wetland consisting of stands of willow trees, wax myrtles, alders, and hydrophytic herbs (Appendix C, Table 4.4-2).

Table 4.4-2 Wetlands Within the Delineated Area

Aquatic Resource Name	Wetland Type	Location (lat/long) of polygon center	Aquatic Resource Size (ft^2)
Wetland 1	1-parameter	Scattered stands of willows, wax myrtle, red alder and hydrophytic herbs throughout Manila	128,550 ft^2
Wetland 2	3-par Palustrine emergent ditches	Along Peninsula Road	14,885 ft^2
Wetland 3	3-par Palustrine emergent wetlands	Between Victor Blvd and shore, between Young Lane and shore.	15,050 ft^2
Wetland 4	3-par Freshwater forested shrub wetland	Gully	7,170 ft^2
Wetland 5	3-par Estuarine and marine wetland	Shore of Humboldt Bay	7,795 ft^2
Total Wetlands in Project Area			**173,450 ft^2**

Based on the current design, the Project would not impact SNCs. Temporary and permanent impacts to delineated wetlands are summarized in Table 4.4-3. Impacts to wetlands would result in a potentially significant impact.

Table 4.4-3 Temporary and Permanent Wetland Impacts

Impact Type	Total Within Project Area ft^2	Temporary Impact ft^2	Permanent Impact ft^2
One Parameter Wetlands	128,550	16,420 (0.38 acre)	837 (0.02 acre)
Three Parameter Wetlands	44,900	18,538 (0.43 acre)	250 (0.01 acre)

Mitigation

Implementation of Mitigation Measure BIO-7 and BIO-8 would reduce the potential impact to wetlands.

Mitigation Measure BIO-7: Avoidance and Minimization Measures to Protect Adjacent Wetlands

The Manila CSD shall implement the following avoidance and protection measures for Waters of the United States and Waters of the State adjacent to areas of planned disturbance that will not be impacted (filled or excavated) during Project construction:

- The Manila CSD shall attempt to avoid or minimize impacts to wetlands/waters to the greatest extent feasible in the final design plans.
- Adjacent wetlands shall be clearly identified in the final construction documents (100% design planset)
- Suitable perimeter control measures, such as silt fences, or straw wattles shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These measures shall be installed prior to any clearing or grading activities.

Mitigation Measure BIO-8: Compensate for Loss of Wetlands

The Project shall avoid fill and conversion of seasonal wetlands and waters, to the extent feasible. If fill cannot be avoided, the Project shall compensate for the loss of seasonal wetland habitat to ensure there is no net loss in wetlands. The Project shall compensate for impacts to identified wetlands through restoration, rehabilitation, and/or creation of wetland at a ratio of no less than 1:1 and to the satisfaction of jurisdictional agencies.

A Habitat, Mitigation, and Monitoring Plan (HMMP) shall be prepared in coordination with the NCRWQB, the USACE, and the Coastal Commission. Onsite locations for three-parameter wetland mitigation shall occur along existing drainage ditches, at the locations where rain gardens would be installed, and the locations where drainage ditch connection will be created. Onsite locations for one-parameter wetland mitigation shall occur within the Manila Community Park area. The Plan shall be acceptable to the regulatory agencies with jurisdiction over wetlands and waters and include the following elements: mitigation ratios, description and size of the restoration or compensatory area, site preparation and design, plant species, planting design and techniques, maintenance activities, plant storage, irrigation requirements, success criteria, monitoring schedule, and remedial measures. The Plan shall be implemented by the Manila CSD.

The Project shall also compensate for impacts to other waters by obtaining required permits from the USACE, the NCRWQCB, and Coastal Commission shall be received prior to the start of any on-site construction activity. The Manila CSD shall ensure any additional measures outlined in the permits are implemented.

With the implementation of Mitigation Measure BIO-7 and BIO-8, impacts to wetlands would be less than significant.

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? (No Impact)

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Maintaining the continuity of established wildlife corridors is important to: (a) sustain species with specific foraging requirements, (b) preserve a species' distribution potential, and (c) retain genetic diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

No Essential Connectivity Areas have been identified within the BSA, and the nearest is approximately 20 miles east (Appendix E). However, based on the observation of the riparian habitat, dense understory, and deciduous tree canopy cover, the area within and adjacent to the Manila Community Park has the potential to function as a riparian corridor for bird species. Shrub cover along drainage areas, roads, and railroad tracks may facilitate the movement of songbird species, provide nesting habitat, and provide cover from predator species by acting as a hedgerow. Although these features facilitate connectivity, this is a highly disturbed area by recreationalists in the Manila Community Park and vehicular traffic, which can negatively influence reproductive success. Residential roads and State Route 255 may also be barriers to certain species' movement.

The BSA is not located within or near a "natural landscape block" identified in the California Essential Habitat Connectivity Project. The nearest natural landscape block is located approximately 14 miles northeast of the BSA (Appendix E). There is hydrologic connectivity between small portions of the BSA and the margins of Humboldt Bay. The Project does not include any elements that would impede migration of native resident or migratory fish. The Project also does not include any elements that would result in new barriers to terrestrial wildlife movement. The Project would not interfere with the migration of birds, bats, or other species. No impact would result.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Less Than Significant)

The Project is located within the Humboldt Bay Area Plan of the Humboldt County LCP (Humboldt County 2022). The Humboldt Bay Area Plan identifies land uses and standards by which development will be evaluated within the Coastal Zone as defined by the California Coastal Act. The indicated uses and standards adopted by Humboldt County, and certified by the CCC, are in conformance and satisfy the policies and requirements for coastal land use contained in the California Coastal Act and other related legislation. Section 3.30 of the Humboldt Bay Area Plan describes the Natural Resources Protection Policies and Standards. The Humboldt Bay Area Plan defines ESHA as "any area in which plant or animal life or their habitats are either rare, including locally rare, or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." Chapter 3 of the Humboldt Bay Area Plan identifies the following environmentally sensitive habitats within the Humboldt Bay Planning Area:

- Wetlands and estuaries, including Humboldt Bay and the mouth of the Mad River
- Vegetated dunes along the North Spit to the Mad River and along the South Spit
- Rivers, creeks, gulches, sloughs and associated riparian habitats, including Mad River Slough, Ryan Slough, Eureka Slough, Freshwater Slough, Liscom Slough, Fay Slough, Elk River, Salmon Creek, and other streams
- Critical habitats for rare and endangered species listed on State or federal lists

With the implementation of Mitigation Measure BIO-7 and BIO-8, SNCs and wetlands located within the Project Area would not be significantly impacted. The Project would not conflict with any policies in the Humboldt Bay Area Plan. With the incorporation of Mitigation Measure BIO-7 and BIO-8, any potential impact would be less than significant.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (No Impact)

Currently there is not an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plans that cover the Project Area. No impact would result.

4.5 Cultural Resources

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

Impact analysis related to cultural resources is based on the Cultural Resource Investigation (CRI) prepared for the Project (Roscoe and Associates 2022). The study area is termed the Area of Potential Effect (APE). The APE is located in Wiyot ancestral lands surrounding Humboldt Bay.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (No Impact)

The CRI included the review of two railroads, eighteen historic-period buildings, one historic period building complex and one historic district within 0.5 miles of the APE. Three historic period buildings were also documented within 100 feet of the APE, and all three of these buildings were found to be ineligible for the National, State and local designation through survey evaluation. Within the CRI, one historical resource, property, or structure was identified within the APE.

The Eureka and Klamath River Railroad (E.K.R Railroad) (P-12-002457) was constructed in 1897 and is historically significant and eligible for the California Register of Historical Places Criterion A based on its association with the historic redwood lumber industry in the American West. The E.K.R Railroad may also be eligible under Criterion B for its association with the locally significant Vance family who built the railroad. Current Project plans do not propose any alterations to the E.K.R Railroad (P-12-002457). Although this resource is present in six locations, the proposed Project would not cause a substantial adverse change to the resource (Roscoe and Associates 2022). A less than significant impact would result.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less Than Significant Impact with Mitigation)

Within the CRI, field surveys did not yield artifacts, features, sites or other archaeological cultural resources. Twelve Wiyot archaeological sites were reported within 0.5 miles of the Project Area. No resources are documented in the direct APE; however, several sites are located in very close proximity (within 100 feet).

Native American tribes and individuals and the NAHC were contacted by Roscoe and Associates to discuss the proposed Project. This correspondence resulted in recommendations for monitoring all excavation work related to this Project. Due to historical residential and commercial development in this area, archaeological sites may not be observable during surface survey, and in many cases, their exact locations are unknown. The Bear River Band of Rohnerville Rancheria THPO specifically requested that a monitor from the Bear River Band of Rohnerville Rancheria be present during excavations in specific locations within the Project Area. Wiyot Tribe and Blue Lake Rancheria THPOs also recommended that a tribal monitor be present during construction activities in specific locations within the Project Area. The CRI includes a monitoring plan that identifies postimplementation recording requirements, how discoveries would be addressed, and how collections would be curated or reburied.

Although no archaeological resources were observed, in order to provide protection for archaeological resources that may be inadvertently discovered during the course of construction, Mitigation Measure CR-1 would be implemented to establish protocols for inadvertent archaeological discovery. With the implementation of Mitigation Measure CR-1 the potential impact would be less than significant.

Mitigation

Implementation of Mitigation Measures CR-1 would reduce the potential impact to archaeological resources or human remains by requiring a cultural monitor and providing procedures that shall be taken in the event of inadvertent discovery.

Mitigation Measure CR-1: Cultural Monitoring and Inadvertent Archaeological Discoveries

The Manila CSD will retain a qualified cultural resource monitor who is approved by the Wiyot Tribe, Bear River Band of the Rohnerville Rancheria, and the Blue Lake Rancheria to monitor ground disturbing activities related to this Project in areas the Tribes deem culturally sensitive, specifically:

- Any ground disturbance within ~100 feet of a recorded site
- Excavation meeting or exceeding 1 foot (below historical flow line) within existing drainage channels
- In locations where new culverts will be placed and excavation meets or exceeds 1 foot below existing culvert flow line
- In locations where grading is occurring to construct new drainage features regardless of the excavation depth
- Any excavation where the construction inspector is not present to oversee that the excavation does not exceed the lines are grades on the final design construction plans

The Manila CSD will contact the three Tribal Historic Preservation Officers or their functional equivalent to set up and implement a cultural monitoring contract when a construction schedule has been determined. Advanced coordination with the qualified cultural monitor is required. The Manila CSD shall provide written verification for compliance with this Condition. If cultural or historic-era resources are encountered during construction activities, the contractor on site shall cease all work in the immediate area and within a 66-foot buffer of the discovery location. A qualified archaeologist, as well as the Tribal Historic Preservation Officers for the Bear River Band Rohnerville Rancheria, Blue Lake Rancheria, and Wiyot Tribe shall be contacted to evaluate the discovery and, in consultation with the applicant and lead agency, develop a treatment plan in any instance where significant impacts cannot be avoided. Prehistoric materials may include obsidian or chert flakes, tools, locally darkened midden soils, groundstone artifacts, shellfish or faunal remains, and human burials.

Implementation of Mitigation Measure CR-1 would reduce the potential impacts to a less-than-significant level during construction because a plan would be implemented to require a cultural monitor, address discovery of unanticipated archaeological resources, and to preserve and/or record those resources consistent with appropriate laws and requirements.

c) Disturb any human remains, including those interred outside of formal cemeteries? (Less Than Significant Impact with Mitigation)

While the CRI did not determine archaeological resources were likely to be present within the APE, inadvertent discovery of human remains may still occur. In the event human remains are encountered during construction, Mitigation Measure CR-2 would be implemented to ensure any potential impact would be less than significant.

Mitigation

Implementation of Mitigation Measure CR-2 would reduce the potential impact to archaeological resources or human remains by requiring procedures that shall be taken in the event of inadvertent discovery.

Mitigation Measure CR-2: Inadvertent Discovery of Human Remains

If human remains are discovered during Project construction, work will stop at the discovery location, within 66 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (PRC, Section 7050.5). The Humboldt County Coroner will be contacted to determine if the cause of death must be investigated. If the Coroner determines that the remains are of Native American origin, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC, PRC, Section 5097). The Coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98.

Implementation of Mitigation Measure CR-2 would reduce the potential impacts to a less-than-significant level during construction because a plan would be implemented to address discovery of unanticipated human remains and to preserve and/or record those resources consistent with appropriate laws and requirements.

4.6 Energy Resources

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

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (Less Than Significant with Mitigation)

Construction of the Project would involve a variety of earthwork and construction practices, involving the use of heavy equipment as discussed in Section 4.3 (Air Quality). Construction would require the use of fuels, primarily gas, diesel, and motor oil. Construction emissions were estimated using CalEEMod version 2020.4.0 and were estimated to be approximately 49 $MTCO_2e$ from all construction activities (Appendix B). The Project's construction emissions equal 1.6 $MTCO_2e$ per year when annualized over the assumed 30-year lifespan of the Project. Peak travel associated with Project construction would consist of approximately 38 vehicular round trips per day, and construction equipment would remain staged in the Project Area once mobilized. Excess soils and construction materials would be stored on-site within previously designated staging areas only. Excess soils may be re-used on-site for backfill and finished grading. Excess soils would not remain stockpiled on-site once the Project is complete. The contractor may haul additional excess soils off-site for legal use at other permitted sites.

Inefficient construction-related operations would also be avoided due to the measures in Mitigation Measure AQ-1 (Measures to Reduce Air Pollution). Equipment idling times would be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes or less (as required by Mitigation Measure AQ-1). Because construction would not encourage activities that would result in the use of large amounts of fuel and energy in a wasteful manner, and the incorporation of Mitigation Measure AQ-1would reduce idling time, impacts related to the inefficient use of construction-related fuels would be less than significant with mitigation.

Operation of the Project would include maintenance and monitoring as described in the Project Description and would be consistent with the existing maintenance and monitoring of the existing stormwater infrastructure. Operation and maintenance of the Project would not generate additional vehicle trips nor result in an increase in energy use above existing conditions. The potential for wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant with the incorporation of Mitigation Measure AQ-1.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (No Impact)

The Project would not conflict with or inhibit the implementation of the State Integrated Energy Policy Report (IEPR), Senate Bill (SB) SB 100, Renewable Portfolio Standard (RPS) or other relevant State regulations or plans. The majority of California's energy-related plans are not directly applicable to the Project or its operations; however, the Project complies with those plan requirements that apply.

The Project would not inefficiently utilize energy due to incorporation of Mitigation Measure AIR-1, which limits idling time and provides measures to protect air quality. The Project would temporarily require the use of equipment in order to construct the components of the Project; however, these activities would be temporary and would not interfere with the broader energy goals of the State. Operationally, the Project would not generate an increase in vehicle trips above existing conditions. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. No impact would result.

4.7 Geology and Soils

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

The Project is located adjacent to an existing highway (SR 255) on the Samoa Peninsula, within the community of Manila. The Project Area is generally flat with regional geology likely influenced by seismic activity as a result of the relatively close proximity of the Mendocino Triple Junction to the Project. A spur of the Mad River Fault Zone is located approximately 3.5 miles northeast of the Project, and a spur of the Little Salmon Fault Zone is located approximately five miles south of the Project as mapped by the California Geological Survey (CGS 2022). Review of historical aerial photographs indicates that the majority of the Project Area was formerly sand dunes between the Pacific Ocean to the west, and Humboldt Bay to the east.

The Project Area is predominantly comprised of Urban land-Anthraltic Xerorthents association soils with zero to two percent slopes, with a small portion of the southern extent of the Project Area is comprised of Hydraquents-Wassents mucky silt loam, strongly saline soils with zero to three percent slopes, and a small portion at the community center of Lanphere soils with two to 75 percent slopes (Appendix E of Appendix C). The Urban land-Anthraltic Xerorthents association contains gravelly loamy fine sand in the upper horizon (to a depth of six inches), underlain by sandy loam to a depth of 31 inches, followed by gravelly sand to 43 inches and underlain by sand.

a.i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (No Impact)

According to the California Geological Survey, there are no earthquake fault zones in the Project Area or vicinity. The closest fault zone is located in Arcata approximately 3.5 miles northeast of the Project Area (CGS 2022). Construction and operation of the Project would have no effect on a known earthquake fault because none exist in the Project Area. No impact would result.

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

The Project is situated within a seismically active area close to several seismic sources capable of generating moderate to strong ground motions. Because the Project is located within a seismically active area, the probability that strong ground shaking associated with large magnitude earthquakes would occur during the design life of the Project is high.

The Project Area is in proximity to numerous latest Quaternary faults located in both the onshore and offshore areas, including the Cascadia subduction zone, Gorda plate, and shallow upper plates (e.g., Mad River and Little Salmon fault zones). The Mendocino fault zone and San Andreas fault also have the potential to generate strong ground motion in the Project Area. The Humboldt County coast is a highly active tectonic region that has been subjected to numerous earthquakes of low to moderate strength and occasionally to very strong earthquakes. Seismicity in the region is attributed primarily to the Mendocino Triple Junction, the interaction between the Pacific, Gorda, and North American plates. Project implementation would not increase risk of strong seismic ground shaking above existing conditions.

Given the Project would not increase the risk of strong seismic ground shaking, the impact to people and structures from strong seismic ground shaking would be less than significant.

a.iii, aiv, c, d) Liquefaction, landslides, or otherwise unstable soils? (No Impact)

Liquefaction is the transformation of saturated, loose, fine-grained sediment to a fluid-like state because of earthquake shaking or other rapid loading. Liquefaction is known to occur in loose or moderately saturated granular soils with poor drainage.

Expansive soils can cause considerable distress to roads and building foundations as they “rise-and-fall” in accordance with the cycles of soil wetting (swelling) and drying (shrinking). Soils with high percentages of silicate clays are those that have the potential for shrinking and swelling.

The Project is located in a mapped liquefaction hazard zone (Humboldt County 2022a). Implementation of the Project would not exacerbate potential liquefaction, rather the potential for liquefaction would remain unchanged following Project implementation. The Project is located on the northern portion of the Samoa Peninsula and is generally flat. The Project Area does not include steep slopes or hillsides and thus, does not have the potential for landslides. Soils with high percentages of silicate clays are those that have the potential for shrinking and swelling. Mapping by the NRCS shows the Project Area to have the highest percentage of clay content ranging between one percent and 37 percent with Plasticity Index values of 1 and 15. Thus, those soils are considered to have a low potential for expansion, and implementation of the Project would not exacerbate potential liquefaction or landslides. Therefore, implementation of the Project would have no impact on liquefaction, landslides, or otherwise unstable soils.

b) Result in substantial soil erosion or the loss of topsoil? (Less Than Significant Impact)

The Project Area is comprised of sandy substrate, predominantly sandy loam at depths less than four feet from the surface (Appendix E of Appendix C). Construction activities, including excavation, grading, soil compaction, and operation of heavy machinery would disturb soil and, therefore, have the potential to cause erosion. Erosion and sediment control provisions prescribed in the Humboldt County Municipal Code and the SWPPP would be required as part of the Project. Erosion prevent measures would include silt fences, straw wattles, soil stabilization controls, and site watering for controlling dust. Erosion prevent measures would be designed to stabilize soils and minimize the potential transport of sediment to receiving waters during and post construction. Therefore, the potential soil erosion impact from construction would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (No Impact)

The Project does not propose the installation or modification of septic tanks or wastewater disposal systems. Therefore, construction and operation of the Project would have no impact on wastewater infrastructure.

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

Paleontological resources are the remains or traces of prehistoric animals and plants. Paleontological resources, which include fossil remains and geologic sites with fossil-bearing strata are non-renewable and scarce and are a sensitive resource afforded protection under environmental legislation in California. Under California PRC § 5097.5, unauthorized disturbance or removal of a fossil locality or remains on public land is a misdemeanor. State law also requires reasonable mitigation of adverse environmental impacts that result from development of public land and affect paleontological resources (PRC § 30244).

It is unlikely that Project construction would impact potentially significant paleontological resources because most of the Project occurs in relatively newly deposited alluvium. However, the possibility of encountering a paleontological resource during construction cannot be completely discounted, therefore, the impact related to the potential disturbance or damage of previously undiscovered paleontological resources, if present, is considered potentially significant.

Mitigation

Implementation of Mitigation Measure GEO-1 would reduce the impact of construction activities on potentially unknown paleontological resources to a less-than-significant level by addressing discovery of unanticipated buried resources and preserving and/or recording those resources consistent with appropriate laws and requirements.

Mitigation Measure GEO-1: Inadvertent Discovery of Paleontological Resources

In the event that fossils are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), construction activities shall be diverted away from the discovery within 50 feet of the find, and a professional paleontologist shall be notified to document the discovery as needed, to evaluate the potential resource, and to assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the material, if it is determined that the find cannot be avoided. The paleontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices. Any fossils collected from the area shall then be deposited in an accredited and permanent scientific institution where they will be properly curated and preserved.

Therefore, implementation of Mitigation Measure GEO-1 would reduce this impact to a less-than-significant level for both construction and operation because a plan to address discovery of unanticipated paleontological resources and to preserve and/or record those resources consistent with appropriate laws and requirements would be implemented.

4.8 Greenhouse Gas Emissions

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

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less Than Significant)

NCUAQMD has not adopted regulations regarding the evaluation of greenhouse gas (GHG) emissions in a CEQA document and has not established CEQA significance criteria to determine the significance of impacts with regard to GHGs. The NCUAQMD has stated that they would not comment adversely on the use of thresholds of significance from the Bay Area Air Quality Management District (BAAQMD) for projects within Humboldt County. However, the BAAQMD has recently revised their adopted recommended CEQA thresholds of significance for GHG. The BAAQMD's Justification Report for the newly adopted greenhouse gas thresholds identify the thresholds as specific for 'development projects' of commercial/residential development and other projects. Per the Draft Justification Report:

> The Air District has developed these thresholds of significance based on typical residential and commercial land use projects and typical long-term communitywide planning documents such as general plans and similar long-range development plans. As such, these thresholds may not be appropriate for other types of projects that do not fit into the mold of a typical residential or commercial project or general plan update.
>
> Lead agencies should keep this point in mind when evaluating other types of projects. A lead agency does not necessarily need to use a threshold of significance if the analysis and justifications that were used to develop the threshold do not reflect the particular circumstances of the project under review. Accordingly, a lead agency should not use these thresholds if it is faced with a unique or unusual project for which the analyses supporting the thresholds as described in this report do not squarely apply. In such cases, the lead agency should develop an alternative approach that would be more appropriate for the particular project before it, considering all of the facts and circumstances of the project on a case-by-case basis. (emphasis added)

Additionally, the BAAQMD's Justification Report states:

> There is no proposed construction-related climate impact threshold at this time. Greenhouse gas emissions from construction represent a very small portion of a project's lifetime GHG emissions. The proposed thresholds for land use projects are designed to address operational GHG emissions which represent the vast majority of project GHG emissions. (BAAQMD 2022)

The BAAQMD's thresholds do not include guidance for infrastructure projects or to construction-generated emissions. Therefore, the Sacramento Metropolitan Air Quality Management District's (SMAQMD) and South Coast Air Quality Management District's (SCAQMD) recommended GHG methodology and thresholds for construction and operational impacts were applied. For Project construction, SMAQMD has a threshold of 1,100 metric tons of carbon dioxide ($MTCO_2e$) per year threshold of significance (SMAQMD 2021). SCAQMD recommends a threshold of 1,100 $MTCO_2e$ applied to construction and operation; SCAQMD recommends that construction emissions be amortized over the life of the project, defined as 30 years, and added to the operational emissions for comparison against the threshold of significance.

In order to assess the potential impact of construction-generated emissions, the construction GHG emissions were annualized over an assumed 30-year Project lifespan and added to operational emissions. Based on CalEEMod modeling (attached as Appendix B), Project construction activities would result in a small, temporary increase in GHG emissions, including exhaust emissions from on-road trucks, worker commute vehicles, and off-road heavy-duty equipment. Construction would require clearing, earthmoving, and delivery equipment, as used for similar Projects, and which have been accounted for in the State's emission inventory and reduction strategy for both on and off-road vehicles. Construction emissions were estimated using CalEEMod version 2020.4.0 and were estimated to be approximately 49 $MTCO_2e$ from all construction activities. The Project's construction emissions equal 1.6 $MTCO_2e$ per year when annualized over the assumed 30-year lifespan of the Project. Project operation and maintenance would substantively be similar to existing conditions and would not result in an increase in GHG emissions above existing operations activities. Therefore, the Project's GHG emissions would be less than significant.

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

The California Air Resource Board (CARB) 2022 Scoping Plan identifies a path to meet the SB 32 GHG emission reduction goals, as well as reducing anthropogenic GHG emissions to 85 percent below 1990 levels by 2045, and achieving carbon neutrality by 2045 or earlier, consistent with Assembly Bill 1279 (AB 1279). The 2022 Scoping Plan includes measures to move to a zero-emissions (decarbonized) transportation sector and phasing out the use of natural gas in residential and commercial buildings. The 2022 Scoping Plan would also reduce emissions of short-lived climate pollutants (SLCPs) and includes mechanical CO_2 removal and carbon capture and sequestration actions, as well as natural working lands management and nature-based strategies. The plan's measures are identified in Table 2-2 and Table 2-3 of the 2022 Scoping Plan. The measures are statewide and programmatic in nature. The 2022 Scoping Plan is largely advisory, as CARB does not directly regulate many of the sectors identified by the plan's measures.

The 2022 Scoping Plan states that local action by municipalities can support and amplify efforts to reduce GHGs. Local government decisions play a critical role in supporting state-level measures to contain the growth of GHG emissions associated with the transportation system and the built environment. Local actions, provided in Appendix D of the 2022 Scoping Plan, are not required by statutory or gubernatorial direction, and are not binding, but contain guidance and information regarding actions that other jurisdictions may choose to take that complement the 2022 Scoping Plan measures. However, the 2022 Scoping Plan measures are broad policy and regulatory initiatives that would be implemented at the state level and do not relate to the construction and operation of individual projects such as the Project.

Project construction would cause a temporary increase in GHGs; however, as discussed above Project emissions would not exceed the identified emission thresholds. The Project is analyzed for consistency with the 2022 Scoping Plan in Table 4.8-1 – Consistency Analysis Between Project and 2022 Scoping Plan. As shown in the table, the Project is consistent with the actions for the Scoping Plan scenario outlined in 2022 Scoping Plan for AB 32 GHG inventory sectors. Therefore, the Project would not conflict with SB 32, AB 1279, or the 2022 Scoping Plan and would result no impact.

Table 4.8-1 Consistency Analysis Between Project and 2022 Scoping Plan

Scoping Plan Sector and Action	Consistency/Applicability Determination
GHG Emissions Reductions Relative to the SB 32 Target – 40% below 1990 levels by 2030.	**Not Applicable.** This is a statewide measure that cannot be implemented by the Project or lead agency.
Smart Growth / Vehicle Miles Traveled (VMT) – VMT per capita reduced 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045.	**Not Applicable.** This is a statewide measure and VMT reduction goal that is not applicable to all individual projects due to regional variations and growth projections. Additionally, the Project would not generate new or increased operational trips.
Light-duty Vehicle (LDV) Zero Emission Vehicles (ZEVs) – 100% of LDV sales are ZEV by 2035.	**Not Applicable.** This is a statewide measure that cannot be implemented by the Project or lead agency. However, the

Scoping Plan Sector and Action	Consistency/Applicability Determination
	standards would be applicable to the light-duty vehicles that would access the Project Area during construction and operation.
Truck ZEVs – 100% of medium-duty (MDV)/HDV sales are ZEV by 2040 (AB 74 University of California Institute of Transportation Studies [ITS] report).	**Not Applicable.** This is a statewide measure that cannot be implemented by the Project or lead agency.
Aviation – 20% of aviation fuel demand is met by electricity (batteries) or hydrogen (fuel cells) in 2045. – Sustainable aviation fuel meets most or the rest of the aviation fuel demand that has not already transitioned to hydrogen or batteries.	**Not Applicable.** This is a statewide measure that cannot be implemented by the Project or lead agency. The Project does not involve an aviation uses.
Ocean-going Vessels (OGV) – 2020 OGV At-Berth regulation fully implemented, with most OGVs utilizing shore power by 2027. – 25% of OGVs utilize hydrogen fuel cell electric technology by 2045.	**Not Applicable.** The Project does not involve ocean-going vessels.
Port Operations – 100% of cargo handling equipment is zero-emission by 2037. – 100% of drayage trucks are zero emission by 2035.	**Not Applicable.** The Project does not involve a port.
Freight and Passenger Rail – 100% of passenger and other locomotive sales are ZEV by 2030. – 100% of line haul locomotive sales are ZEV by 2035. – Line haul and passenger rail rely primarily on hydrogen fuel cell technology, and others primarily utilize electricity.	**Not Applicable.** The Project does not involve freight or passenger rail.
Oil and Gas Extraction – Reduce oil and gas extraction operations in line with petroleum demand by 2045.	**Not Applicable.** The Project does not involve oil or gas extraction.
Petroleum Refining – CCS on majority of operations by 2030, beginning in 2028. – Production reduced in line with petroleum demand.	**Not Applicable.** The Project does not involve or petroleum refining.
Electricity Generation – Sector GHG target of 38 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) in 2030 and 30 $MMTCO_2e$ in 2035. – Retail sales load coverage. – 20 gigawatts (GW) of offshore wind by 2045. – Meet increased demand for electrification without new fossil gas-fired resources.	**Not Applicable.** This measure would apply to electricity providers. The Project is not an electricity provider.
New Residential and Commercial Buildings – All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030.	**Consistent.** The Project does not include new residential or commercial buildings.
Existing Residential Buildings – 80% of appliance sales are electric by 2030 and 100% of appliance sales are electric by 2035. – Appliances are replaced at end of life such that by 2030 there are 3 million all-electric and electric-ready homes—and by 2035, 7 million homes—as well as contributing to 6 million heat pumps installed statewide by 2030.	**Not Applicable.** This is a measure for the state to modify its requirements for appliance sales to affect energy efficiency of existing residential buildings. The Project would not include appliance manufacturing or sales, or continued use of existing residential buildings.

Scoping Plan Sector and Action	Consistency/Applicability Determination
Existing Commercial Buildings – 80% of appliance sales are electric by 2030, and 100% of appliance sales are electric by 2045. – Appliances are replaced at end of life, contributing to 6 million heat pumps installed statewide by 2030.	**Not Applicable.** The Project would not include continued use or existing commercial buildings.
Food Products – 7.5% of energy demand electrified directly and/or indirectly by 2030; 75% by 2045.	**Not Applicable.** The Project does not include agricultural or mass food production.
Construction Equipment – 25% of energy demand electrified by 2030 and 75% electrified by 2045.	**Not Applicable.** Although the Project would involve the use of construction equipment, construction would occur in 2024, prior to the electrification goal. Additionally, the Project would not own the construction fleet used.
Chemicals and Allied Products; Pulp and Paper – Electrify 0% of boilers by 2030 and 100% of boilers by 2045. – Hydrogen for 25% of process heat by 2035 and 100% by 2045. – Electrify 100% of other energy demand by 2045.	**Not Applicable.** This measure would apply to the energy sources for pulp and paper manufacturers. The Project is not pulp or paper manufacture.
Stone, Clay, Glass, and Cement – CCS on 40% of operations by 2035 and on all facilities by 2045. – Process emissions reduced through alternative materials and CCS.	**Not Applicable.** This measure would apply to the direct GHG emissions from CCS industries. The Project is not a CCS industry.
Other Industrial Manufacturing – 0% energy demand electrified by 2030 and 50% by 2045.	**Not Applicable.** This measure would apply to the energy sources for industrial manufacturers. The Project is not an industrial manufacturer.
Combined Heat and Power – Facilities retire by 2040.	**Not Applicable.** This measure would apply to the existing combined heat and power energy facilities. The Project is not combined heat and power facility.
Agriculture Energy Use – 25% energy demand electrified by 2030 and 75% by 2045.	**Not Applicable.** The Project does not include agricultural production.
Low Carbon Fuels for Transportation – Biomass supply is used to produce conventional and advanced biofuels, as well as hydrogen.	**Not Applicable.** This measure would apply to the bulk fuel providers The Project is not a fuel provider.
Low Carbon Fuels for Buildings and Industry – In 2030s blended in pipeline. – Renewable hydrogen blended in fossil gas pipeline at 7% energy (~20% by volume), ramping up between 2030 and 2040. – In 2030s, dedicated hydrogen pipelines constructed to serve certain industrial clusters.	**Not Applicable.** This measure would apply to natural gas utilities and energy providers. The Project is not an energy provider.
Non-combustion Methane Emissions – Increase landfill and dairy digester methane capture. – Some alternative manure management deployed for smaller dairies. – Moderate adoption of enteric strategies by 2030. – Divert 75% of organic waste from landfills by 2025. – Oil and gas fugitive methane emissions reduced 50% by 2030 and further reductions as infrastructure components retire in line with reduced fossil gas demand.	**Consistent.** The Project does not include a landfill or dairy. The Project would reduce construction waste with implementation of state mandated recycling and reuse mandates.
High GWP Potential Emissions – Low GWP refrigerants introduced as building electrification increases, mitigating HFC emissions.	**Not Applicable.** The Project does not include appliances that would use refrigerants.

Source of Scoping Plan Reduction Measures: CARB 2022

4.9 Hazards and Hazardous Materials

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

Impact analysis is based on the Corridor Study Report (CSR), which was conducted for this Project in 2022 (GHD 2022). The CSR's purpose is to identify areas of potentially impacted soil and/or groundwater limited to 1/8 mile along the Project Area that may require special handling and disposal during construction or would potentially pose a health exposure risk to construction workers. to the CSR accumulates and reviews pertinent and reasonably ascertainable information to develop an independent professional opinion of the environmental condition of the Project Area and to identify potential, probable or actual environmental contamination that may impact Project construction design. The CSR was completed as part of the due diligence assessment process to evaluate potential environmental liabilities associated with the Project Area.

This CRS was completed in general conformance with the American Society of Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process 1527-13 and the Caltrans ISA (Standard Environmental Reference, Volume 1, Chapter 10). Interviews were not conducted with current or past property owners, tenants, or occupants of the properties located within the Project Area and constitutes a deviation from the ASTM and Caltrans standards.

The CRS included reviewing government records for properties within one-eighth (1/8) of a mile (660 feet) of the Project Area boundaries that may have potential for environmental concern during construction. The basis for the records review was a government database search conducted by Environmental Data Resources Inc. (EDR), as part of the ISA.

The CSR identified locations where potentially impacted soil and/or groundwater may be encountered. As the assessment was conducted, the sites were assigned a GHD Hazard Class ranging from one to four, which was used to categorize sites based on potential risk. The GHD hazard classes are defined as follows:

- Hazard Rank 1: A site that would likely affect Project construction. Contamination of soil and/or groundwater is confirmed to be within the Project Area.
- Hazard Rank 2: A site with the potential to affect the Project, either because of the presence of contamination that may likely migrate into the Project Area or because the extent of contamination is unknown.
- Hazard Rank 3: A site that is not known to be contaminated, but due to current or historical use could possibly have contamination that could affect Project construction.
- Hazard Rank 4: A site that has little or no potential to affect the Project.

The CRS identified four locations identified with a Hazard Rank of 2, including within Project Area boundaries that may be contaminated. This is further detailed in Section d) below.

The EDR database search identified sites that government regulatory agencies have reported as having environmental concerns, such as releases of contaminants to the soil and/or groundwater, underground storage tanks (USTs) or use of hazardous materials. The CSR further researched listed sites that have the potential to affect the Project by reviewing available records on the SWRCB GeoTracker Website. The CSR conducted a field reconnaissance within the Project Area on June 22, 2022, where access was granted to determine if potential sites of concern existed which were not listed in the EDR Report. The Project Area reconnaissance was also performed to verify the locations of listed sites. Aerial photographs from 1941 to 2016, and historical topographic maps from 1933 to 2018 were provided by EDR and reviewed during the completion of the ISA.

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

Construction of the Project would include the transport and use of common hazardous materials inherent to the construction process, including petroleum products such as fuel and lubricants for construction equipment and vehicles, concrete curing compounds, and solvents for construction of Project improvements. These materials are commonly used during construction, are not acutely hazardous, and would be used in relatively small quantities.

Hazardous materials storage, handling, and transportation must comply with an interconnected matrix of local, state, and federal laws. Hazardous materials used during construction of the Project would be subject to applicable regulations, including California Health and Safety Code Section 25531, Division 20, Chapter 6.5, and other standards enforced by the various departments and boards under the California Environmental Protection Agency (Cal/EPA). The Project would be subject to Cal/EPA hazardous materials regulations consolidated under the state's Unified Program enforced by the Department of Toxic Substances Control (DTSC), the State Water Resources Control Board (SWRCB), North Coast Regional Water Quality Control Board (Regional Board), NCUAQMD, and the Department of Resources Recycling and Recovery (CalRecycle). The Cal/EPA administers the Unified Program via local Certified Unified Program Agencies (CUPAs). The CUPA for Humboldt County is the Humboldt County Division of Environmental Health (HCDEH). The HCDEH Hazardous Materials Unit has jurisdiction over the Project Area and is tasked with local CUPA inspections and compliance. Project activities involving the transport, use, storage, and disposal of hazardous materials would be in accordance with established rules and regulations.

Worker exposure to hazardous materials is regulated by California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) and requires worker safety protections. Cal/OSHA enforces hazard communication regulations which require worker training and hazard information (signage/postings) compliance. In addition, hazard communication compliance includes procedures for identifying and labeling hazardous substances, communicating information related to hazardous substances storage, handling, and transportation; and preparation of health and safety plans to protect employees.

Project construction specifications would require the management of hazardous materials to comply with applicable laws, rules, and regulations. During Project construction, the contractor would be required to contain hazardous materials and avoid exposure to workers, the public, and surrounding environment during construction. An appropriate facility would be utilized for legal disposal of any hazardous materials generated.

Project construction would be required to implement stormwater management requirements during construction in accordance with the State Water Resources Control Board General Construction Storm Water Permit (Section 2.1 – Environmental Protection Action 1). Stormwater management requirements for addressing materials management would be required, including proper material delivery and storage, spill prevention and control, and management of concrete and other wastes, as described in Section 4.10 (Hydrology and Water Quality).

The established regulatory framework, BMPs, and requisite construction protocols provide appropriate risk mitigation and hazard protections, thus the Project would not create a significant hazard to the public or environment from hazardous materials. Because the Project and its contractors would be required to comply with existing and future hazardous materials laws and regulations addressing the transport, storage, use, and disposal of hazardous materials, the potential to create a significant hazard to the public or the environment during Project construction would be less than significant.

Following construction, operation of the Project would require intermittent maintenance and repair, which could involve hazardous materials. The operational risk posed by intermittent maintenance and repair of the road specific to hazardous materials is low. The potential to create a significant hazard to the public or the environment during Project operation would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Less Than Significant)

The Project would utilize heavy machinery to perform some construction-related tasks including grading, drilling, excavation, and transportation of materials. There is always the possibility when equipment is operating that an accident could occur, and fuel could be released onto the soil. Equipment on site during construction would be required to have emergency spill cleanup kits immediately accessible in the case of any fuel or oil spills. Equipment would not be refueled near the Humboldt Bay or any perennial wetland. If equipment must be washed, it would be washed off-site. The potential impact would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Less Than Significant)

The Redwood Coast Montessori school is located within 0.25 mile of the Project at the Manila Community Center. The Project includes the use of heavy machinery which would emit hazardous emissions such as carbon monoxide and are assumed to include the use of hazardous materials such as fuels, lubricants, degreasers, paints, and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials. Although construction activities could result in the inadvertent release of small quantities of hazardous substances, a spill or release at a construction area is not expected to endanger individuals at nearby schools given the nature of the materials, the small quantities that would be used, and the distance of the schools from the Project Area. Therefore, because the Project and its contractors would be required to comply with existing and future hazardous materials laws and regulations covering the transport, use, and disposal of hazardous materials, and because of the nature and quantity of the hazardous materials to be potentially used by the Project, the impact related to the use of hazardous materials during construction near the school would be less than significant. Project operations would have a less than significant impact on the Redwood Coast Montessori school.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (Less Than Significant With Mitigation)

The CSR identified no recognized environmental conditions (RECs) in the Project Area. An REC is defined in the ASTM Standard as:

1. The presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; or
2. The likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or
3. The presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment

The CRS found evidence of historic or present land uses on adjoining properties that may have generated or caused the release of regulated or hazardous materials to the environment. Therefore, the following findings represent business environmental risks (BERs), defined by the ASTM standard as "a risk which can have material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel or commercial real estate".

Redwoods United, Inc., a site assigned a Hazard Rank of 3, is not known to be contaminated, but due to current or historical use, has the potential for soil and groundwater contamination that could affect Project construction. However, Redwoods United, Inc. is not identified on the State Water Resources Control Board Geotracker website. Redwoods United, Inc. was assigned a Hazard Rank of 3 due to its historical use of hosting a 550-gallon leaded fuel tank. The physical address of 1611 Peninsula Drive is currently occupied by Redwood Coast Montessori School and the Manila Community Center, making it unlikely that the property is being regulated for environmental contamination. The site is not known to be contaminated, but due to current or historical use, it could possibly have contamination that could affect Project construction.

The Big Oil property, a site assigned a Hazard Rank 2, has the potential to affect the Project either because of the presence of contamination that may likely migrate into the Project Area or because the extent of contamination is unknown. It was assigned a Hazard Rank of 2 because of identified contamination which has been subsequently cleaned. The Big Oil site is located at 180 Lupin Drive, Manila, California and is further identified as Humboldt County Division of Environmental Health (HCDEH) Local Oversight Program (LOP) Case Number 12667. This property is located west of the Project Area on the southeast side of Lupin Drive.

Based on information contained in the SWRCB Geotracker website and the HCDEH files, soil at the Big Oil site was impacted by a release of petroleum hydrocarbons from five former USTs and associated piping utilized at the property. Constituents of concern (COCs) for this site include petroleum hydrocarbons and metals from Leaking Underground Storage Tanks (LUSTs). HCDEH correspondence dated March 31, 2005, states that the site qualifies for No Further Action (NFA) as "No significant petroleum hydrocarbon was detected in soil and groundwater samples. Water quality objectives have been met." The HCDEH March 2005 correspondence noted that, "Chromium, nickel, and zinc are considered background." The HCDEH approved NFA for this case on June 9, 2006. It is unlikely that impacts from this site would affect soil and groundwater quality in the vicinity of the Project Area since the Project would not be located within 15 feet of the Big Oil site.

The Redwood Coast Trucking property at 2210 Peninsula Drive (located south of the Project Area) was assigned a Hazard Rank of 2 because it is an active site that is a hazardous waste generator as well as having aboveground petroleum storage. From the inspection record notes in the EDR report it appears that the hazardous waste generation is related to vehicle maintenance operations and storage for the trucking fleet. There are violations noted for improper waste storage and labeling in the record as recently as 2017. In addition to the current site operations, this site is listed as a LUST cleanup site in the GeoTracker database with a site ID of T06023000087 and a status of Case Closed as of 1/10/1990. Although the LUST case is closed, the report indicated the potential for reopening the case if contamination was found in the future because the UST was abandoned and not removed. The EDR report lists this site as being 211 ft from the Project Area. In addition to the close proximity to the Project Area, groundwater is assumed to be flowing toward Humboldt Bay, which means that groundwater from the Redwood Coast Trucking site is potentially flowing toward the Project Area, toward Humboldt Bay.

The Sierra Pacific Industries Arcata Division property located at 2593 New Navy Base Road (north of the Project Area) is currently occupied by A&N Logging. There has been historical contamination on the site while it was occupied by Sierra Pacific Industries and there are two regulated cases for this site in GeoTracker. This site is listed in GeoTracker as a LUST cleanup site with site ID number T0602301628 and a regulatory status of Case Closed (for the UST case only) as of 12/14/2007. This site is also listed in GeoTracker as a Cleanup Program Site with a site ID number T0602393344 and a regulatory status of open as of 6/22/2017. The CSR assigned this site a Hazard Class of 2, with the potential for the site to have impact on the Project Area due to known contamination that has the potential to migrate in groundwater. The southwest corner of the site does have a groundwater flow direction toward Humboldt Bay (in the direction of the Project Area), and therefore potential impacts from the site cannot be eliminated.

Much of the Project Area follows the Union Pacific Railroad Corridor and roadways within the community of Manila. There is potential for shallow soil contamination of heavy metals and petroleum hydrocarbons (creosote and Polycyclic Aromatic Hydrocarbons (PAH) specifically) due to historical railroad use. Railroad corridors are commonly associated with PAHs and CAM-17 metals. Roadways that were constructed prior to the implementation of unleaded motor vehicle fuels are at risk of Aerially Deposited Lead (ADL).

Based upon this information, and with the proximity of Class 2 hazards, it is likely that contamination present from adjacent or nearby sites may likely migrate into the Project Area, and therefore a potentially significant impact could occur.

Mitigation

Implementation of Mitigation Measure HAZ-1 would reduce the impact of hazard to workers and the public to a less-than-significant level by requiring pre-characterization and protocols for contaminated soil and groundwater.

Mitigation Measure HAZ-1: Implement Corridor Study Report Recommendations

All recommendations resulting from the Corridor Study Report shall be implemented by the Manila CSD prior to, during, and following construction, as appropriate.

- If Soluble Threshold Limit Concentration (STLC) analysis exceeds regulatory levels, Soil and Groundwater Management Plan (SGMP) shall be prepared which identifies soil and groundwater handling options and protocols during construction. The SGMP will identify protocols to proactively manage potentially impacted soil and groundwater within the Project Area and reduce worker exposure.
- If the Corridor Study Report indicates constituent of concern impacts above STLC levels to soil and/or groundwater, then construction workers involved in excavation activities will be Hazardous Waste Operations and Emergency Response (HAZWOPER) trained (Occupational Safety and Health Administration [OSHA] 1910.120)

Implementation of Mitigation Measure HAZ-1 would reduce this impact to a less-than-significant level by protecting the environment and people from hazards documented in the CRS.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (No Impact)

The Project is not located within an airport land use plan or within two miles of a public airport. Therefore, no impact would result.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Less Than Significant Impact)

The Project Area is covered under the Humboldt County Emergency Operations Plan (EOP). The Humboldt County EOP identifies the emergency response and evacuation policies and procedures for hazards related to earthquake, tsunami, extreme weather, flooding/flash flooding, landslides, transportation accidents, hazardous materials, interface wildlife fire, energy shortage, offshore toxic spill, civic disturbance, terrorist activities, and national security (Humboldt County 2015).

The Humboldt County EOP establishes a structure for Humboldt County Operation Area agencies to respond to large-scale emergencies requiring multiagency participation or activation of the Humboldt County Emergency Operations Center (EOC) (Humboldt County 2015). Hazard mitigation and risk assessment strategies for Humboldt County Operation Area are formalized in the Humboldt County Operational Area Hazard Mitigation Plan (HMP).

Temporary lane closures on Young Lane, Peninsula Drive, Mill Street, and Victor Boulevard may be required. Temporary lane closures would follow Humboldt County requirements, including Humboldt County encroachment permit conditions, for temporary roadway closures, including signage and public noticing requirements.

The Project would not impair implementation or physically interfere with the established Humboldt County EOP, or Humboldt County HMP. Once constructed, operational use of the Project would enhance transportation along Manila due to reduced roadway flooding. Thus, emergency response or evacuation via existing roadways would not diminish compared to existing conditions. As the Project would not impair implementation of an emergency response plan or evacuation plan, the potential impact related to the temporary road closures during construction would be less than significant.

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

Please see Wildfire Section 4.19 (b).

4.10 Hydrology and Water Quality

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

The Project Area does include streams or tributaries to Humboldt Bay, which is located within the Drainage Management Area I – Young Lane Area and Drainage Management Area IV – Lupine Drive/Park Street Area. Delineated wetlands would be impacted (see Section 4.4 – Biological Resources).

The Project will obtain a CWA Section 401 Water Quality Certification from the NCRWQCB and a CWA Section 404 permit from the USACE.

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less Than Significant with Mitigation)

Construction activities such as site clearing, grading, excavation, and material stockpiling, placement of aggregate base, and related construction activities could leave soils exposed to rain or surface water runoff that may carry soil contaminants (e.g., nutrients or other pollutants) into waterways adjacent to the site, degrade water quality, and potentially violate water quality standards for specific chemicals, dissolved oxygen, suspended sediment, or nutrients to the Humboldt Bay. The greatest potential Project impacts to water quality would result from sediment mobilization during construction. If not properly managed, construction activities could result in erosion, as well the discharge of chemicals and materials to adjacent waterways. In such an instance, applicable water quality standards and waste discharge requirements could be violated, and polluted runoff could substantially degrade water quality in the local storm drain system. This impact is considered to be potentially significant.

However, as described in Section 2.1 (Environmental Protection Action 1), compliance with State Water Board Order No. 2009-0009 would be required which will regulate stormwater runoff from Project construction activities. Project operations will obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. In compliance with the National Pollutant Discharge Elimination System requirements, a Notice of Intent would be prepared and submitted to the North Coastal Regional Water Board prior to undertaking construction, providing notification and intent to comply with the State of California Construction General Permit (CGP). In addition, a SWPPP would be prepared for pollution prevention and control prior to initiating site construction activities.

The Construction SWPPP would be written by a Qualified SWPPP Developer (QSD); would identify and specify the use of best management practices (BMPs) erosion control, sediment control, off-site tracking control, wind erosion control, non-stormwater management control, and waste management and materials pollution control. A sampling and monitoring program would be included in the Construction SWPPP that meets the requirements of the CGP to ensure the BMPs are effective. A Qualified SWPPP Practitioner (QSP) would oversee implementation of the Plan, including visual inspections, sampling and analysis, and overall compliance with the SWPPP and CGP.

Implementation of Environmental Protection Action 1, combined with Mitigation Measures BIO-7 and BIO-8 would reduce potential water quality impacts during Project construction activities to a less-than-significant level by requiring measures to minimize erosion, sediment, and pollutant contribution to surface waters.

Following construction, operation and maintenance of the Project would result in increased drainage and infiltration capacity through the creation and maintenance of bioswales, culverts, rain gardens, and valley gutters, enhancing overall ecosystem services. Therefore, less than significant operational impact would result.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (No Impact)

The Project is located in the Eureka Plain Groundwater Basin 1-099 (DWR 2004) and is not listed as a basin in Critical Conditions of Overdraft (DWR 2018). Contractor-supplied water would be used during construction for dust suppression on local roadways and work areas. Use of groundwater is not anticipated for construction of the Project, although some limited dewatering of excavations may be necessary. Similarly, the Project would not decrease groundwater supplies or interfere with groundwater management. During construction, isolated and short-duration groundwater dewatering may occur as needed. Dewatering would be small in scale and limited to shallow groundwater only. No impact would result.

Following construction, the Project would not utilize groundwater and would not result in an increase in population or employment that would indirectly increase groundwater demand. Therefore, the Project would not create a deficit in aquifer volume or a lowering of water levels. The Project is not expected to result in any change in the use or recharge of any groundwater source. There would be no operational impact to groundwater.

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

The goal of the Project is to improve drainage and reduce impacts from chronic local flooding. The Project will not alter existing drainage patterns or add additional impervious surfaces.

Erosion protection measures would be implemented during construction to avoid impacts to water quality, including those related to siltation (see Hydrology and Water Quality Section (a), above). The required SWPPP, CWA Section 401, and CWA Section 404 permits would also be implemented, including measures to prevent erosion-related impacts during construction. Substantial on- or off-site erosion and siltation would not result, and the potential construction-related impact with regard to erosion and siltation would be less than significant.

The Project would create bioswales and rain gardens, creating a reduction in net impervious areas, increasing water infiltration and reducing the risk of substantial erosion resulting from stormwater events. The operational impact would also be less than significant.

c.ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (No Impact)

The goal of the Project is to improve drainage and reduce impacts from chronic local flooding. The Project will improve infiltration and reduce surface runoff. The Project would have a net decrease of impervious surface through the creation though the creation and maintenance of bioswales, culverts, rain gardens, and valley gutters, resulting in beneficial environmental impacts and enhanced ecosystem services. This includes a neutral or better effect on existing local drainage, flooding, and implementation of stormwater design to contemporary standards throughout the community of Manila. The Project would not alter topography or drainage patterns in a manner that would increase on- or off-site flooding. The Project includes elements that would increase stormwater infiltration. Additionally, in compliance with Environmental Protection Action 1, the Project would develop a SWPPP to be approved by the NCRWCB, and the Project would be designed to meet NCRQWB storm water requirements. The Project would not cause on- or off-site flooding. No impact would result.

c.iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (Less Than Significant)

Grading would occur during summer and fall months when conditions are driest, to minimize the risk of rainfall during the construction period and thus stormwater runoff when graded soils are exposed. As discussed above in Hydrology and Water Quality Section (a), requirements of the SWPPP, CWA Section 401, and CWA Section 404 permits would also be implemented, including measures to prevent polluted stormwater runoff during construction.

Operationally, the Project does not include elements that would significantly alter topography and rates of stormwater runoff. The Project would instead increase stormwater capacity though the creation and maintenance of bioswales, culverts, rain gardens, and valley gutters, increasing infiltration within the community of Manila. A less than significant impact would occur.

c, iv) Impede or redirect flood flows? (Less Than Significant)

The Project Area includes areas located in the FEMA 100-year flood zone within the Drainage Management Area I – Young Lane Area and Drainage Management Area IV – Lupine Drive/Park Street Area (Figure 6 of Appendix C). Project elements within the FEMA 100-year flood zone include replacements of failing and undersized culverts and tide flap gates. The Project maintains existing drainage patterns and does not include any changes that would impede or redirect flood flows, instead it would reduce impacts of flood flows by enhancing capacity. Any potential impact on the impediment or redirection of flood flows would be less than significant

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (Less Than Significant)

The Project Area includes areas located in the FEMA 100-year flood zone within the Drainage Management Area I – Young Lane Area and Drainage Management Area IV – Lupine Drive/Park Street Area (Figure 6 of Appendix C). As portions of the Project Area overlap the FEMA 100-year flood zone, construction would not occur during flood conditions (see Section 1.7 – Construction Schedule). Thus, there would be no potential for a flood-related release of pollutants during construction. The Project does not include unsecured elements that could be washed away during a flood. Any potential construction related impact would be less than significant.

The Project Area is not located near a larger isolated body of water that may be affected by a seiche. No impact from a seiche would result.

The Project Area is entirely located in a tsunami hazard zone. Due to the known seismic activity in the Pacific Rim, a tsunami could impact Humboldt Bay. It is expected that the impact of a tsunami on Humboldt Bay would primarily occur along the North and south spits and the King Salmon and Fields Landing areas, which are located directly across from the opening to Humboldt Bay. The Project would not result in any new structures or hazardous materials that could be released into the environment in the event a tsunami. Because there are existing tsunami evacuation plans for the area (including tsunami sirens), the tsunami risk is anticipated to be less than significant. The Project is therefore not expected to expose people to significant risk, loss, injury, or death from tsunami inundation.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (No Impact)

The relevant water quality control plan is the NCRWQCB's Basin Plan, which establishes thresholds for key water resource protection objectives for both surface waters and groundwater. The Project would obtain coverage under SWRCB Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, which would include a SWPPP, in addition to CWA Section 401 and CWA Section 404 permits. These regulatory requirements and associated requisite monitoring would ensure a conflict with the Basin Plan does not occur. No impact would result.

4.11 Land Use and Planning

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

This section evaluates the potential impacts related to land use, as it applies to construction and operation of the Project. Land use within the Project Area consists of Residential Low Density (RL), Public Recreation (PR), and Public Facility (PF) (Humboldt County 2022b). Zoning within the Project Area consists of Residential Single Family / Manufactured Home/ Archaeological Resource Area (RS-5-M/A), Public Facility – Urban/ Beach and Dune Areas (PF1/B), and Public Recreation / Archaeological Resource Area (PR/A) (Humboldt County 2022c).

a) Physically divide an established community? (No Impact)

The Project would involve construction and operation of vegetated bioswales, rain gardens, replacement of undersized and failing culverts, and new culverts. These elements would not divide any existing neighborhood or community. No impact would result.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (No Impact)

According to Humboldt County's Web GIS, the entirety of the Project is located within the Coastal Zone and is designated as being within the primary permit jurisdiction of the Humboldt County LCP (Humboldt County 2022d). The Humboldt Bay Area Plan (2022) is the Land Use Plan for this area, and the Humboldt County Coastal Zoning Code is the Implementation Plan, with the Humboldt County General Plan being advisory (Humboldt County 2017). The Project Area is within the County and State Jurisdiction of the Coastal Zone. A consolidated coastal development permit would be required from the California Coastal Commission. The Project would adhere to all requirements of the Permit.

Applicable policies adopted for the purpose of avoiding or mitigating environmental effects can be found throughout the Humboldt Bay Area Plan and Humboldt County General Plan. A review of the Humboldt Bay Area Plan and Humboldt County General Plan elements, and the policies and standards within, did not identify any inconsistencies with the proposed Project. Specifically, the Project is consistent with the following goals included in the Humboldt Bay Area Plan:

> *3.30 NATURAL RESOURCES PROTECTION POLICIES AND STANDARDS*
>
> ***** 30240.. (Part) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.**

Therefore, the Project would be consistent with all applicable land use plans and policies. A less than significant impact would result.

Agencies that regulate the filling of wetlands include the USACE and the NCRWQCB. Since the proposed Project would affect USACE and NCRWQCB jurisdictional wetlands, the County has obtained the necessary permit(s) to comply with respective regulations including a CWA Section 404, and Section 401 Water Quality Certification. By implementing permit requirements and mitigation measures identified in the Section 4.4 – Biological Resources above, the Project would not conflict with any applicable federal and State wetland regulations. Additionally, the proposed Project would not permanently alter the existing land uses, their designations, or their zoning, and would not introduce new land uses or land use designations or zoning; therefore, no conflict with applicable land use plans, policies, or regulation(s) would occur. No impact would result.

4.12 Mineral Resources

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

a, b) 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, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (Less Than Significant)

The Project would require minor use of rock, gravel, sand, and other similar materials, but is not expected to have any significant impact on locally available minerals or mineral resources valuable to the region or the State. Additionally, the Project Area is also not designated by the Humboldt County General Plan or other local land use plans as having locally important mineral resources within the Project Area (Humboldt County 2017). The impact would be less than significant.

4.13 Noise

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Result in generation of excessive groundborne vibration or noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

Current noise conditions on and near the Project Area consist of traffic along State Route 255, as well as the adjacent local roadways along the proposed alignment. There are sensitive receptors within 30 feet of the Project Area, which are residential homes. The nearest school, Redwood Coast Montessori, is directly adjacent to the Project where a rain garden would be implemented. Additional industrial and commercial land uses are located in Samoa, approximately two miles south of the Project Area.

a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less Than Significant)

The proposed Project is located within the jurisdiction of the Humboldt Bay Area Plan. However, the Humboldt Bay Area Plan does not provide noise thresholds. Therefore, the Humboldt County General Plan noise policies are applied to noise-related impact analysis.

Construction

Construction of the Project would result in a temporary noise increase associated with the use of construction equipment for the Project for a single construction season, commencing in the summer of 2024, concluding by approximately December 2024. As the Project is linear in nature, the noise associated with construction activities would move along the alignment as work is conducted, resulting in intermittent increases at each of the adjacent sensitive receptors during the construction phase that would shift as construction progresses. Construction activities would be limited to daytime work hours between 7:00 a.m. to 7:00 p.m., Monday through Friday with occasional work on Saturdays. Furthermore, Humboldt County has not established construction-related noise standards. As the construction phase would be temporary and construction activities would be intermittent and limited to between 7:00 a.m. and 7:00 p.m., potential noise impacts generated during the construction phase would be less than significant.

Operation

The Humboldt County General Plan includes Standard N-S1, which specifies that the Land Use/Noise Compatibility Standards (Table 4.13-1 below) shall be used as a guide to ensure compatibility of land uses. Development may occur in areas identified as “normally unacceptable” if mitigation measures can reduce indoor noise levels to “Maximum Interior Noise Levels” and outdoor noise levels to the maximum “Normally Acceptable” value for the given Land Use Category.

For measuring noise levels and setting noise standards, the County uses Table 13-C (Table 4.13-1 below) of the Humboldt County General Plan, which stipulates that 60 Community Noise Equivalent Level (CNEL) is the upper acceptable limit for residential units (outside measurement), and 85 CNEL is the upper acceptable limit for "public ROW" land uses. CNEL is a measure that describes the average noise exposure over a period of time.

Table 4.13-1 Humboldt County Land Use Noise Compatibility Standards

Land Use Category	Maximum Interior Noise Level	Clearly Acceptable Noise Standard (CNEL)	Normally Acceptable Noise Level (CNEL)	Normally Unacceptable Noise Level (CNEL)	Clearly Unacceptable Noise Level (CNEL)
Residential Single Family, Duplex, Mobile Homes	45	50-55	56-60	61-75	76+
Residential Multiple Family, Dormitories, Etc.	45	50-55	56-60	61-75	76+
Transient Lodging	45	50-65	66-70	71-80	81+
School Classrooms, Libraries, Churches	45	50-60	61-65	66-75	76+
Hospitals, Nursing Homes	45	50-60	61-65	66-75	76+
Auditoriums, Concert Halls, Music Shells	35	-	50-60	61-70	71+
Sports Arenas, Outdoor Spectator Sports	-	50-60	61-65	66-75	76+
Playgrounds, Neighborhood Parks	-	50-55	56-65	66-75	76+
Golf Courses, Riding Stables, Water Rec., Cemeteries	-	50-60	61-70	71-80	80+
Office Buildings, Personal Business & Professional	50	50-65	66-75	76-80	81+
Commercial: Retail, Movie Theaters, Restaurants	50	50-65	66-75	76-80	81+
Commercial: Wholesale, Some Retail, Ind, Mfg., Util.	-	50-70	71-80	81-85	86+
Manufacturing, Communications (Noise Sensitive)	-	50-55	56-70	71-80	81+
Livestock Farming, Animal Breeding	-	50-60	61-75	76-80	81+
Agriculture (except livestock), Mining, Fishing	-	50-75	76+	-	-
Public Right of Way	-	50-75	76-85	86+	-
Extensive Natural Recreation Areas	-	50-60	61-75	76-85	86+

Source: Humboldt County General Plan 2017

Once the Project is constructed, the Project would not generate a significant amount of noise. Therefore, operation would not result in noise levels exceeding the County's noise standards for residential units or public ROW land uses. No impact would result.

b) Result in generation of excessive groundborne vibration or noise levels? (Less Than Significant)

Humboldt County does not establish vibration limits to minimize the potential for cosmetic damage to buildings. However, Caltrans recommends a vibration limit of 0.5 inches/second peak particle velocity (PPV) for buildings structurally sound and designed to modern engineering standards, 0.3 inches/second PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 inches/second PPV for ancient buildings or buildings that are documented to be structurally weakened. No known buildings that are documented to be structurally weakened or ancient adjoin the Project Area. Therefore, the 0.5 inches/second PPV limit would apply when considering the potential for groundborne vibration levels to result in a significant vibration impact.

The noise and vibration evaluation assessed typical vibration levels that could be expected from construction equipment at a distance of 25 feet, inclusive of required equipment and methods for all four potential construction options. Project construction activities and equipment such as, concrete trucks, concrete pump trucks, all terrain forklifts, snooper truck, compressors, tracked excavators, backhoes, graders, dump trucks, skid steers, bobcats, and pick-up trucks. Jackhammers, saws, grinders, or similar pieces of equipment may be necessary to support pavement removal may generate substantial vibration in the immediate vicinity.

Table 4.13-2 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. High-power or vibratory tools and rolling stock equipment (e.g., tracked vehicles, compactors), may generate substantial vibration in the immediate vicinity. Vibratory rollers typically generate vibration levels of 0.210 inches/second PPV at a distance of 25 feet. Vibration levels are highest close to the source and attenuate with increasing distance. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

Table 4.13-2 Typical Vibration Levels for Construction Equipment Used During Project Construction (Caltrans 2020)

Equipment	PPV at 25 ft. (in/sec)	Approximate Lv at 25 ft. (VdB)
Vibratory Roller	0.210	94
Large Bulldozer	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Project-related activities would not involve the use of explosives or other intensive construction techniques that could generate significant ground borne vibration or noise. No pile driving is anticipated; however, the Project may utilize a vibratory roller, large bulldozer, and jackhammer. Noise impacts from ground borne noise to humans are anticipated to be minor.

Vibration impacts to residences are anticipated to be minor as the closest residences are located at least 30 feet away. A residence at a distance of approximately 25 feet away from a vibratory roller, as shown in Table 4.13-2, would be exposed to vibration levels up to 0.21 inches/second PPV, which is substantially less than the applicable 0.5 inches/second PPV limit for modern construction. Minor vibration adjacent to mechanized equipment and road/trail treatments during construction work would be generated only on a short-term basis. Therefore, groundborne vibration and noise would have a less than significant impact.

Following construction, operation of the Project would not result in substantial sources of groundborne vibration or groundborne noise. Project operation would not generate vibration, except in instances where larger repairs or maintenance culverts and bioswales might be required. These conditions would be short-term and temporary (taking from one to several weeks to complete depending on the extent of damage or other circumstances); therefore, no operational impact would result.

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

The Project Area is located approximately 3.85 miles northwest of Murray Field Airport and approximately 4.5 miles north of the Samoa Field Airport. The Project is not located within an airport land use plan. Therefore, the Project would not expose people residing or working in the Project Area to excessive noise levels. No impact would result.

4.14 Population and Housing

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

The 2020 population for the community of Manila was estimated to be 798 people (US Census 2020).

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (No Impact)

The Project would not be growth-inducing and would not result in new homes or businesses directly or indirectly. No new roads, extension of utilities, or other infrastructure would be installed or constructed that would indirectly allow for additional residential units or commercial uses to be constructed. Further, the Project does not include any residential units that would directly induce population growth. Maintenance of Project elements is anticipated to be performed by local Manila Community Services District staff. No new employment opportunities would be directly or indirectly induced by implementation of the Project. Therefore, no impact to population growth would result.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)

No housing currently exists within the Project Area; therefore, no people or housing units would be displaced necessitating the construction of replacement housing. No impact would result.

4.15 Public Services

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire Protection?				X
Police protection?				X
Schools?				X
Parks?				X
Other public facilities?				X

The Project would result in an overall benefit to public services by reducing persistent flooding and drainage problems within the community of Manila.

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services? (No Impact)

As discussed in Section 4.13 -- Population and Housing, implementation of the Project would not induce population growth and, therefore, would not require expanded fire or police protection or facilities to maintain acceptable service ratios, response times, or other performance objectives. The Project itself results in an improvement to vegetated bioswales, rain gardens, and culverts. The Project improvements would not result in the need to increase staffing, create new hazardous conditions, or result in a modification to the road system that would restrict access for emergency services. The Project would not necessitate any related new or altered public service facilities. Overall, no impact would occur.

4.16 Recreation

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) 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?				X
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				X

Recreational facilities near the Project Area include the Manila Dunes Recreation Area, Manila Community Park, and the Humboldt Coastal Nature Center.

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (No Impact)

The Project proposes no new recreational amenity within Humboldt County. The proposed Project elements of vegetated bioswales, rain gardens, and culverts, would not increase use to the Manila Dunes Recreation Area, Manila Community Park, the Humboldt Coastal Nature Center, or other recreational facilities or parks. No impact would result.

b) Include or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (No Impact)

The construction or expansion of recreational facilities would not be required by the Project or included in the Project. There would be no impact.

4.17 Transportation

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

The Project would enhance circulation by addressing persistent flooding in the community of Manila and would maintain and enhance community mobility and circulation.

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

The Project would address persistent flooding within the community of Manila. Construction would result in vehicle trips by construction workers and haul-truck trips for material off-haul and deliveries via State Route 255 from the north and US 101 from the south. Construction-related traffic would be temporary, would vary on a daily basis, and would be distributed over the course of a workday and work week. The number of construction-related vehicles traveling to and from the Project Area would vary on a daily basis.

Temporary lane closures on Young Lane, Peninsula Drive, Mill Street, and Victor Boulevard may be required. Temporary lane closures would follow County requirements and encroachment permit for temporary roadway closures, including signage and public noticing requirements.

Once complete, the proposed Project is not expected to increase vehicle traffic on local streets, as it is primarily a flood control Project. The Project would not conflict with effective circulation system performance or intersection level of service standards. Therefore, a less than significant impact would result.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (No Impact)

Pursuant to SB 743 and the current CEQA Guidelines, evaluation of a project's potential transportation impact requires consideration of vehicle miles traveled (VMT), which refers to the amount and distance of automobile travel attributable to a project. Projects that reduce or have no impact on VMT are presumed to cause a less than significant transportation impact (OPR 2018). The purpose of the proposed Project is to reduce flooding within the community of Manila and will not result in an increase in vehicle trips following construction. The Project would not add additional motor vehicle capacity to the roadway network and would not lead to additional vehicle travel. There would be no impact.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (No Impact)

The Project would not change the geometry of the street or roadway network. Therefore, no potentially hazardous roadway design features would be introduced by the Project. There would be no impact.

d) Result in inadequate emergency access? (Less Than Significant)

Emergency access to the Project Area already exists from SR 255 and auxiliary streets, and would continue to exist under the proposed Project during both construction and operation. Temporary lane closures on Young Lane, Peninsula Drive, Mill Street, and Victor Boulevard may be required. Temporary lane closures would follow County requirements for temporary roadway closures, including signage and public noticing requirements, and ingress and regress would be given to emergency access. A less than significant impact would result. Following construction, all properties along the Project Area would continue to have emergency access. No operational impact on emergency access would result.

4.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?		X		
b) Cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.		X		

Please see Section 2.4 (Tribal Consultation) for a summary of tribal consultation.

a,b) Cause a substantial adverse change in the significance of a tribal cultural resource? (Less Than Significant Impact with Mitigation)

CEQA requires lead agencies to determine if a proposed Project would have a significant effect on tribal cultural resources. The CEQA Guidelines define tribal cultural resources as: (1) a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code Section 5024.1(c), and considering the significance of the resource to a California Native American tribe.

Under Assembly Bill (AB) 52, notification letters were sent to the Wiyot Tribe, Blue Lake Rancheria, and the Bear River Band of the Rohnerville Rancheria on November 2, 2022. The Bear River Band of the Rohnerville Rancheria responded, and consultation began on December 12, 2022. No specific tribal cultural resources were identified within the APE, but the area is known to be culturally sensitive, resulting in a potentially significant impact to tribal cultural resources. A request from the tribe to have a cultural resource monitor on-site during the ground disturbing activities of this Project and is incorporated into Mitigation Measure CR-1. The approach to tribal monitoring was documented as acceptable to both parties via email correspondence December 14, and 30, 2022. The Wiyot Tribe and the Blue Lake Rancheria did not respond within 30 days.

4.19 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less Than Significant)

The proposed Project does not involve the use or construction of any facilities that would require new water, wastewater, electrical, natural gas, or telecommunications utilities. Existing water lines near the area of disturbance are shown on the construction plans and would be flagged and protected during construction. The Project would be designed to enhance existing drainage patterns and stormwater infiltration. The construction of these improvements has been evaluated throughout this IS/MND. No stormwater drainage improvements beyond these mentioned would be required. A less than significant impact would result.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (No Impact)

The proposed Project would not create an increased demand for domestic water service. The Project would require relatively small quantities of water during the construction phase (e.g., for dust control and concrete/asphalt applications). The Project's water demands would not be substantial and can be met by existing entitlements and resources. Therefore, the Project would not result in the need for the construction of new water facilities, or the expansion of existing facilities. There would be no impact.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (No Impact)

The Project does not involve sewerage facilities or wastewater treatment and would not impact existing municipal sewerage infrastructure or result in a demand increase on existing wastewater treatment capacity. No impact would result.

d, e) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (Less Than Significant)

The solid waste provider in the area is the Humboldt Waste Management Authority (HWMA). The Project is not expected to generate a significant increase of services for solid waste disposal needs. The proposed shared use pathway would generate limited solid waste during construction and even less waste during operation. Construction solid waste would include the one-time temporary generation of construction waste associated with the proposed development of the shared use pathway. Recyclable construction materials (e.g., scrap metal, wood, concrete, glass) could be shipped to local businesses for reuse, with non-recyclable materials sent to the HWMA transfer station in Eureka or Samoa, California.

The Project may include waste receptacles, spaces for recycling bins, and pet waste stations. Solid waste collected as a part of the Project would be disposed of by the HWMA. HWMA trucks solid waste produced in the County to State licensed landfills located in Anderson, California and Medford, Oregon in compliance with local, State, and federal regulations pertaining to solid waste disposal. These facilities have sufficient capacity to serve the Project's solid waste disposal needs; therefore, a less than significant impact would occur.

4.20 Wildfire

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes?				X

The Project Area is not located in or near a State Responsibility Area (SRA) or on lands classified as very high fire severity zones. The Project Area is located approximately five miles from the nearest SRA and approximately 9 miles from lands classified as a very high fire hazard severity zone (Humboldt County 2022e, 2022f).

a) Substantially impair an adopted emergency response plan or emergency evacuation plan (Less Than Significant)

A review of the Humboldt County Emergency Operations Plan (Humboldt County 2015) and the Tsunami Inundation Map for Emergency Planning – County of Humboldt (CGS 2021) indicates that the proposed Project would not impair emergency response activities nor established evacuation routes. The Project would not block or alter any roads or pedestrian ways within the Project Area. A less than significant impact would result.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? (Less Than Significant)

The Project would be located within the community of Manila in a fairly flat topographical area. Some grassland and other vegetation are present along the Project Area. The vegetated portions could be susceptible to wildfire during Project construction or operation due to accidental ignition. During construction, all hazardous materials and construction equipment would be appropriately used and stored pursuant to all required State and local regulations. During operation, the Project would not house any pollutants within the Project Area that may be released if a wildfire occurred. Furthermore, the Project does not include any structures built for human occupancy. Due to the temporary nature of construction, the minimal amount of pollutants anticipated to be stored during the construction phase, the fact that the Project is located within an area of “moderate” fire risk, and that the Project does not provide any structures to be used for human occupancy, it is not anticipated to exacerbate wildfire risks and thereby expose users to pollutants. A less than significant impact would result.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? (No Impact)

Development of the drainage elements would not result in a need to expand infrastructure to the Project Area or in the immediate vicinity of the Project. New roads for fire defense, expanded water sources, new power lines, or the development of other utilities would not be required. No impact would result.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes? (No Impact)

The Project Area is located within a low slope area of topography. If a wildfire were to occur, post-fire slope instability would be unlikely. Furthermore, the drainage of the Project Area is not proposed to change as a result of the Project. Therefore, no impact would result.

4.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Does the project:				
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?			X	

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? (Less Than Significant Impact with Mitigation)

As evaluated in this IS/MND, the Project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory.

Mitigation measures are listed herein to reduce impacts related to air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, and tribal cultural resources. With implementation of the required mitigation measures, impacts would be less than significant.

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

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. As discussed in Section 4.10 (Land Use and Planning), the Project is consistent with the goals and policies of the Humboldt County General Plan and Humboldt Bay Area Plan.

Table 4.21-1 provides a list of past, present, and reasonably foreseeable future projects within and near the Project Area in the communities of Samoa and Manila, including a brief description of the projects and their anticipated construction schedules (if known). Single-family homes and other similar small-scale uses were not included because of their negligible cumulative effects. Efforts to identify cumulative projects included outreach to the Humboldt County Planning Department, Caltrans, Humboldt County Department of Public Works, Manila Community Services District (CSD), and the Humboldt Bay Harbor, Recreation, and Conservation District. Identified projects are summarized in Table 4.21-1.

Table 4.21-1 Projects Considered for Cumulative Impacts

Project Name and Location	Project Description	Estimated Construction Schedule	Relevancy to the Project's Potential Cumulative Impacts
Manila CSD Recreation Improvement Projects *Located near the Project in Manila*	Minor grading to enhance the existing community park and recreation facilities in Manila.	Future, year unknown; dependent upon unsecured grant funding.	Applicable. The drainage improvements would be located near the Project and would involve ground disturbance.
Manila CSD Drinking Water Improvement Project *Located near the Project in Manila*	New, larger water storage tank, pumps, and control house. New water line crossing under SR 255 at Carlson Drive. Ground disturbance limited to existing disturbed areas.	Future, year unknown; dependent upon unsecured grant funding.	Applicable. The water improvements would be located near the Project and would involve ground disturbance.
Manila CSD Wastewater Improvement Project *Located near the Project in Manila*	Miscellaneous upgrades to the wastewater septic tank effluent pumping system, including pump replacements. Minimal ground disturbance needed.	Future, year unknown; dependent upon unsecured grant funding	Applicable. The wastewater improvements would be located near the Project and would involve ground disturbance.
Manila Shared Use Pathway Project along Highway 255 *Located near the Project in Manila*	Paved shared-use pathway adjacent to Highway 255 in Manila extending approximately one mile. See below for more detail.	Completed	No relevance, the project is complete.
Fiber optic off-shore cable landing project *Parallel to State Route 255 in Samoa and Manila, CA*	An off-shore fiber optic cable would cross the sea floor and land in or near Samoa, CA then travel to a data center in Arcata	Ongoing	No relevance. Within the vicinity of the Project, the fiber is located directly adjacent to SR255.

The three projects proposed by the Manila CSD would also be located within proximity and involve varying levels of grading and/or ground disturbance. All proposed activities would be fully permitted and thus, include standard measures for environmental protection. Improvements to wastewater and recreational facilities would result in benefit to the environmental when combined with the Project by improving biological, hydrology and water quality, and recreational conditions in Manila. Improvements to water and wastewater infrastructure would not be environmentally impactful. All three projects remain pending acquisition of required grant funds. Any potential cumulative adverse impact would remain less than significant.

The impacts associated with the proposed Project analyzed in this IS/MND would not add appreciably to any existing or foreseeable future significant cumulative impact. Incremental impacts, if any, would be negligible and undetectable. Any applicable cumulative impacts to which this Project would contribute would be mitigated to a less-than-significant level. Incremental impacts, if any, would be very small, and the cumulative impact would be less than significant. Because the proposed Project would not result in significant impacts after mitigation, and because the proposed Project is a shared use pathway project rather than a development project that could add to existing and future population growth and development in the area, the proposed Project would not contribute to any significant cumulative impacts which may occur in the area in the future. Therefore, the impact would be less than significant.

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

The Project has been planned and designed to avoid significant environmental impacts. As discussed in the analysis throughout Section 4 of this IS/MND, the Project would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings. The impact would be less than significant.

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Andrea Hilton, Environmental Planner
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Appendices

Appendix A

Figures

Figure 1: Vicinity Map

Figure 2: Project Study Boundary

Figure 3 1-3: Project Components

Appendix B

CalEEMod Modeling Information and Results

Appendix C
Wetland Delineation

Appendix D

Botanical and Sensitive Natural Community Assessment Memorandum

Appendix E

Wildlife Habitat Assessment Memorandum

Appendix F

Mitigation, Monitoring, and Reporting Program

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The Power of Commitment

Attachment 5

Public Circulation CEQA Initial Study /Mitigated Negative Declaration Appendices

Appendix A Figures

Appendix B CalEEMod Modeling Information and Results

Appendix C Wetland Delineation

Appendix D Botanical and Sensitive Natural Community Assessment Memorandum

Appendix E Wildlife Habitat Assessment Memorandum

Appendix F Mitigation, Monitoring, and Reporting Program

Manila Community Services District Flood Reduction and Drainage Enhancement Project

Public Circulation Initial Study & Proposed Mitigated Negative Declaration

Manila Community Services District

February 17, 2023

Public Circulation Initial Study & Proposed Mitigated Negative Declaration

Manila Community Services District Flood Reduction and Drainage Enhancement Project

Prepared for:

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T 707-444-3803 | **E** manilacsd1@sbcglobal.net | **manilacsd.com**

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Appendices

Appendix A Figures

Figure 1: Vicinity Map

Figure 2: Project Study Boundary

Figure 3 1-3: Project Components

Appendix B CalEEMod Modeling Information and Results

Appendix C Wetland Delineation

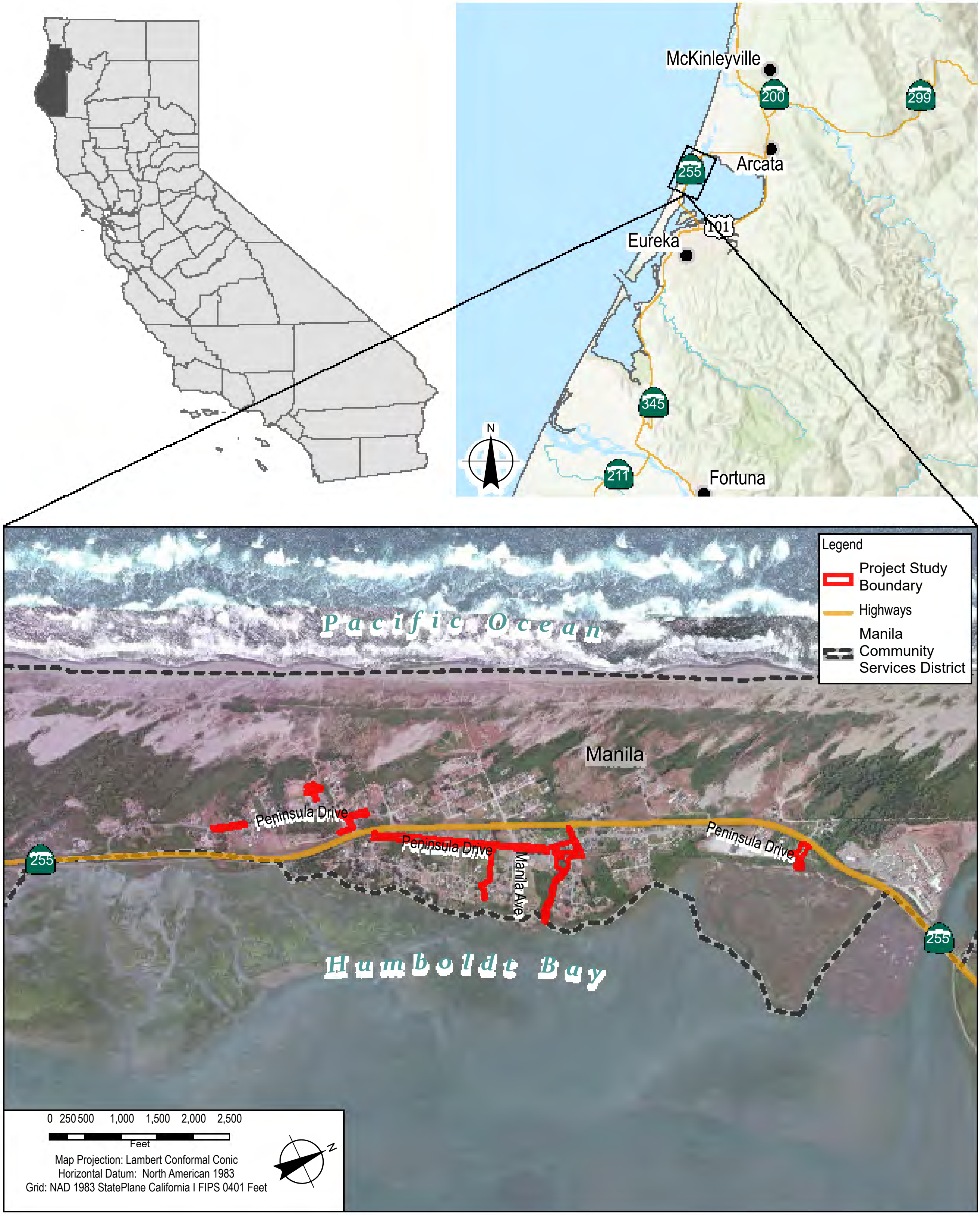
Appendix D Botanical and Sensitive Natural Community Assessment Memorandum

Appendix E Wildlife Habitat Assessment Memorandum

Appendix F Mitigation, Monitoring, and Reporting Program

Appendix A

Figures



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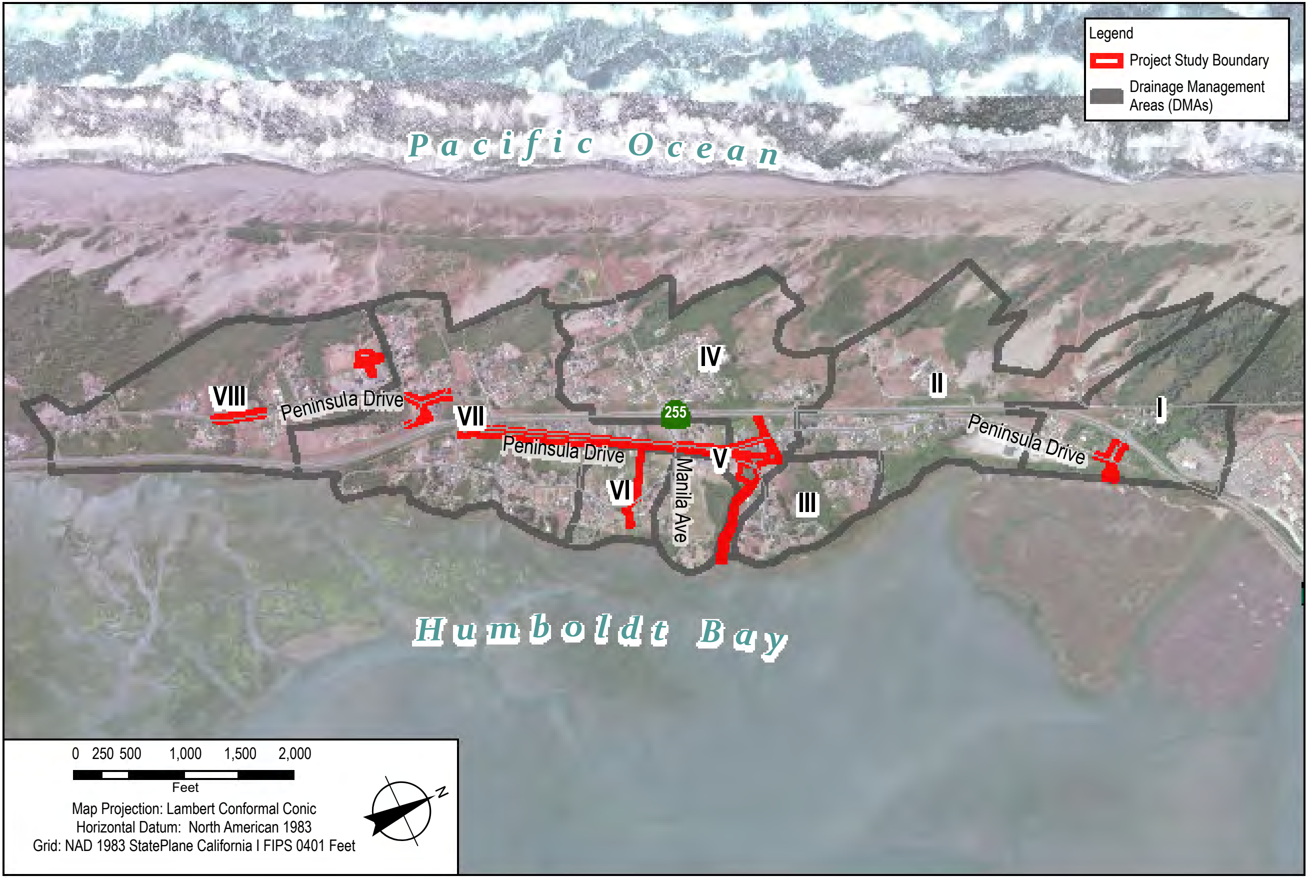

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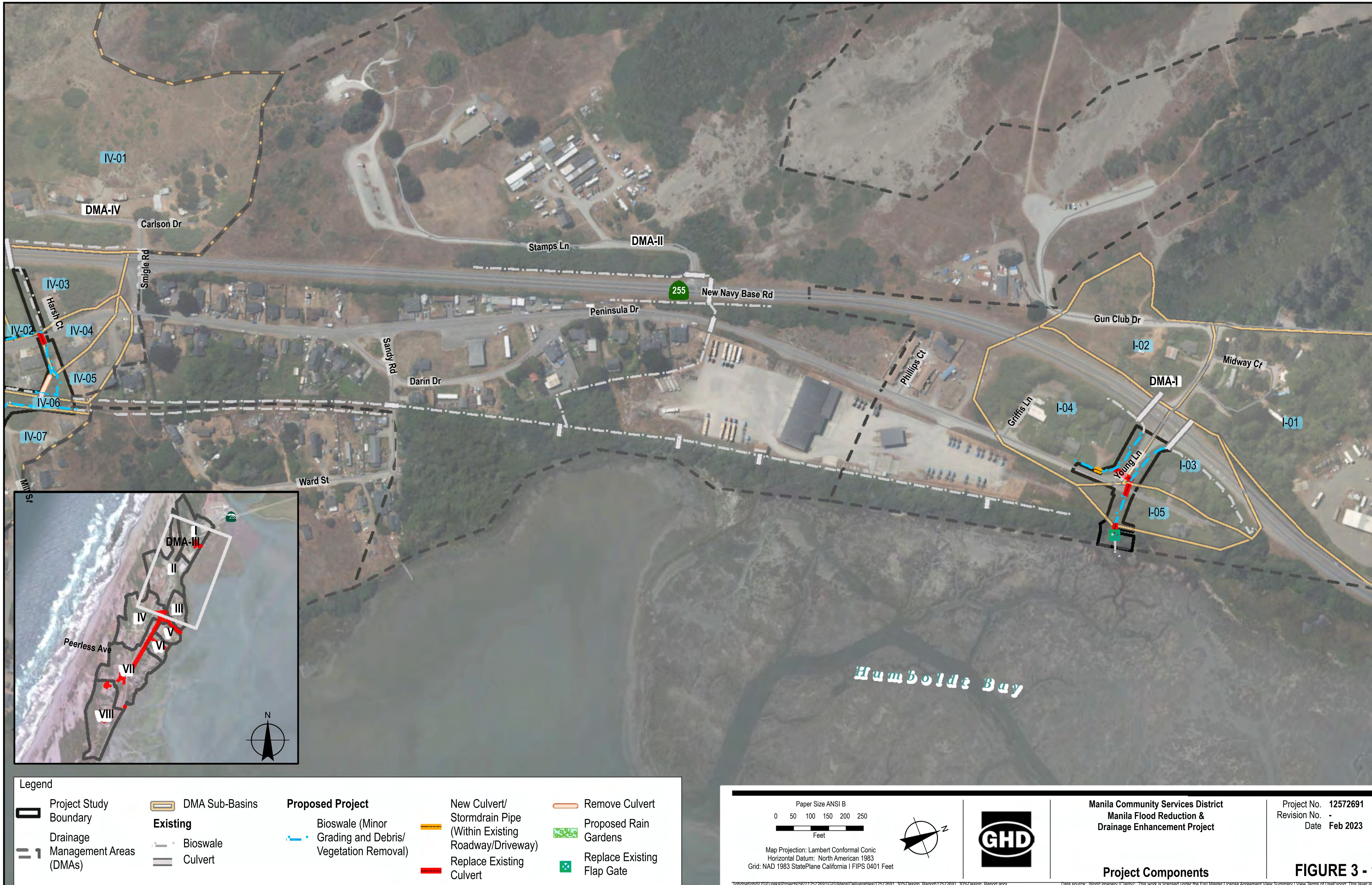

Paper Size ANSI B

0 50 100 150 200 250

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

GHD

Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project Components

Project No. **12572691**
Revision No. **-**
Date **Feb 2023**

FIGURE 3 - 1

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Manila Community Services District
Manila Flood Reduction & Drainage Enhancement Project

Project No. 12572691
Revision No. -
Date Feb 2023

Project Components

FIGURE 3 - 2

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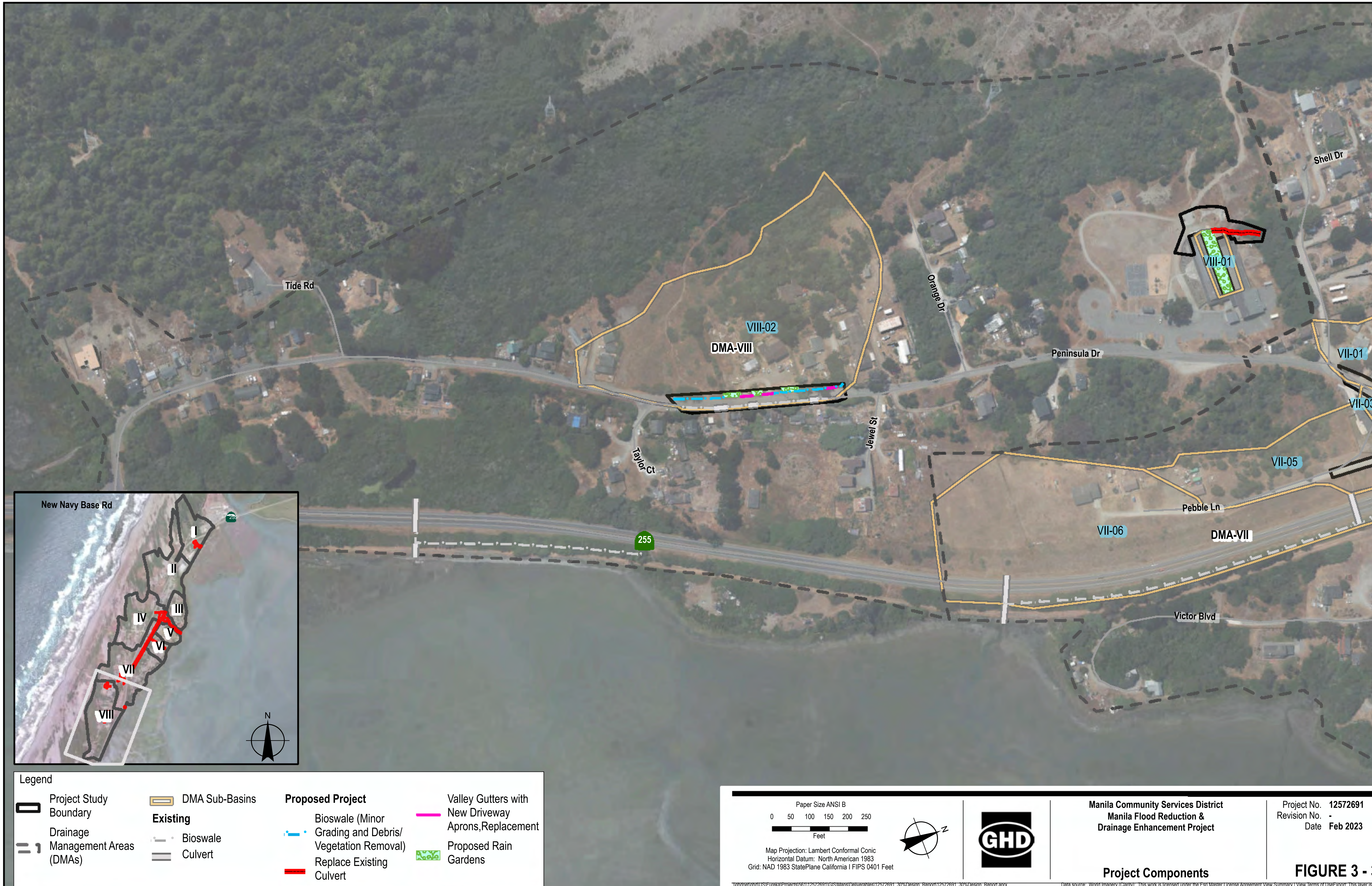

Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No. 12572691
Revision No. -
Date Feb 2023

Project Components

FIGURE 3 - 3

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Appendix B

CalEEMod Modeling Information and Results

Manila Drainage Project - Construction - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Manila Drainage Project - Construction

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	3.36	1000sqft	0.08	3,360.00	0
City Park	0.35	Acre	0.35	15,246.00	0

1.2 Other Project Characteristics

Urbanization Rural

Wind Speed (m/s) 2.2

Precipitation Freq (Days) 103

Climate Zone 1

Operational Year 2025

Utility Company Pacific Gas and Electric Company

CO2 Intensity (lb/MWhr) 203.98

CH4 Intensity (lb/MWhr) 0.033

N2O Intensity (lb/MWhr) 0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction Only

Land Use - Apprx. 0.35 acres of grading activity for swales, and 3,360sf of repaving

Construction Phase - Demo increased to 20 working days. Site Prep increased to 10 working days. Grading and Repaving increased to 20 working days each.

Off-road Equipment - Default Equipment and Activity

Trips and VMT - Default Worker and Haul Trips. Assumed 1 Vendor trip per day during repaving.

Demolition - 61 Tons of Asphalt to Haul

Grading - 1,000 CY for Veg Offhaul, 1,100 CY for Swales off-haul

Vehicle Trips - Construction Only

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	20.00

Manila Drainage Project - Construction - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	PhaseEndDate	5/17/2024	5/31/2024
tblConstructionPhase	PhaseEndDate	5/22/2024	8/16/2024
tblConstructionPhase	PhaseEndDate	5/29/2024	9/13/2024
tblConstructionPhase	PhaseEndDate	5/20/2024	7/1/2024
tblConstructionPhase	PhaseStartDate	5/21/2024	7/21/2024
tblConstructionPhase	PhaseStartDate	5/23/2024	8/17/2024
tblConstructionPhase	PhaseStartDate	5/18/2024	6/18/2024
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialExported	0.00	1,100.00
tblProjectCharacteristics	CH4IntensityFactor	0	0.033
tblProjectCharacteristics	CO2IntensityFactor	0	203.98
tblProjectCharacteristics	N2OIntensityFactor	0	0.004
tblProjectCharacteristics	PrecipitationFrequency	0	103
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblProjectCharacteristics	WindSpeed	0	2.2
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00

Manila Drainage Project - Construction - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0267	0.2572	0.2401	5.5000e-004	0.0634	0.0102	0.0736	0.0280	9.4800e-003	0.0374	0.0000	48.1516	48.1516	0.0102	1.3800e-003	48.8160
Maximum	**0.0267**	**0.2572**	**0.2401**	**5.5000e-004**	**0.0634**	**0.0102**	**0.0736**	**0.0280**	**9.4800e-003**	**0.0374**	**0.0000**	**48.1516**	**48.1516**	**0.0102**	**1.3800e-003**	**48.8160**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition - Pavement	Demolition	5/6/2024	5/31/2024	5	20	
2	Site Preparation - Vegetation Removal	Site Preparation	6/18/2024	7/1/2024	5	10	
3	Grading - Swale	Grading	7/21/2024	8/16/2024	5	20	
4	Paving - Repaving	Paving	8/17/2024	9/13/2024	5	20	

Acres of Grading (Site Preparation Phase): 5

Acres of Grading (Grading Phase): 15

Acres of Paving: 0.08

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

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Manila Drainage Project - Construction - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition - Pavement	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition - Pavement	Rubber Tired Dozers	1	1.00	247	0.40
Demolition - Pavement	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation - Vegetation Removal	Graders	1	8.00	187	0.41
Site Preparation - Vegetation Removal	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading - Swale	Graders	1	6.00	187	0.41
Grading - Swale	Rubber Tired Dozers	1	6.00	247	0.40
Grading - Swale	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving - Repaving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving - Repaving	Pavers	1	7.00	130	0.42
Paving - Repaving	Rollers	1	7.00	80	0.38
Paving - Repaving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition - Pavement	4	10.00	0.00	6.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation - Vegetation Removal	2	5.00	0.00	125.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading - Swale	3	8.00	0.00	138.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving - Repaving	7	18.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - Pavement - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.5000e-004	0.0000	6.5000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1600e-003	0.0548	0.0740	1.2000e-004		2.5000e-003	2.5000e-003		2.3900e-003	2.3900e-003	0.0000	10.4207	10.4207	1.8900e-003	0.0000	10.4679
Total	**6.1600e-003**	**0.0548**	**0.0740**	**1.2000e-004**	**6.5000e-004**	**2.5000e-003**	**3.1500e-003**	**1.0000e-004**	**2.3900e-003**	**2.4900e-003**	**0.0000**	**10.4207**	**10.4207**	**1.8900e-003**	**0.0000**	**10.4679**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	5.0000e-004	9.0000e-005	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1735	0.1735	0.0000	3.0000e-005	0.1817
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.5000e-004	4.3900e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9645	0.9645	3.0000e-005	3.0000e-005	0.9753
Total	**6.7000e-004**	**9.5000e-004**	**4.4800e-003**	**1.0000e-005**	**1.2500e-003**	**1.0000e-005**	**1.2600e-003**	**3.3000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.1380**	**1.1380**	**3.0000e-005**	**6.0000e-005**	**1.1570**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - Vegetation Removal - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7100e-003	0.0000	2.7100e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4900e-003	0.0280	0.0195	5.0000e-005		1.0100e-003	1.0100e-003		9.3000e-004	9.3000e-004	0.0000	4.2741	4.2741	1.3800e-003	0.0000	4.3086
Total	**2.4900e-003**	**0.0280**	**0.0195**	**5.0000e-005**	**2.7100e-003**	**1.0100e-003**	**3.7200e-003**	**2.9000e-004**	**9.3000e-004**	**1.2200e-003**	**0.0000**	**4.2741**	**4.2741**	**1.3800e-003**	**0.0000**	**4.3086**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8000e-004	0.0105	1.8000e-003	4.0000e-005	1.0300e-003	9.0000e-005	1.1200e-003	2.8000e-004	9.0000e-005	3.7000e-004	0.0000	3.6152	3.6152	1.0000e-005	5.7000e-004	3.7846
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.1000e-004	1.1000e-003	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2411	0.2411	1.0000e-005	1.0000e-005	0.2438
Total	**3.5000e-004**	**0.0106**	**2.9000e-003**	**4.0000e-005**	**1.3300e-003**	**9.0000e-005**	**1.4200e-003**	**3.6000e-004**	**9.0000e-005**	**4.5000e-004**	**0.0000**	**3.8563**	**3.8563**	**2.0000e-005**	**5.8000e-004**	**4.0285**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - Swale - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0532	0.0000	0.0532	0.0257	0.0000	0.0257	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1300e-003	0.0973	0.0555	1.4000e-004		4.0000e-003	4.0000e-003		3.6800e-003	3.6800e-003	0.0000	12.3800	12.3800	4.0000e-003	0.0000	12.4801
Total	**9.1300e-003**	**0.0973**	**0.0555**	**1.4000e-004**	**0.0532**	**4.0000e-003**	**0.0572**	**0.0257**	**3.6800e-003**	**0.0294**	**0.0000**	**12.3800**	**12.3800**	**4.0000e-003**	**0.0000**	**12.4801**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-004	0.0116	1.9800e-003	4.0000e-005	1.1400e-003	1.0000e-004	1.2400e-003	3.1000e-004	9.0000e-005	4.1000e-004	0.0000	3.9911	3.9911	1.0000e-005	6.3000e-004	4.1782
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.6000e-004	3.5100e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.6000e-004	2.6000e-004	1.0000e-005	2.6000e-004	0.0000	0.7716	0.7716	3.0000e-005	3.0000e-005	0.7802
Total	**7.3000e-004**	**0.0119**	**5.4900e-003**	**5.0000e-005**	**2.1000e-003**	**1.1000e-004**	**2.2000e-003**	**5.7000e-004**	**1.0000e-004**	**6.7000e-004**	**0.0000**	**4.7627**	**4.7627**	**4.0000e-005**	**6.6000e-004**	**4.9585**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - Repaving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.9000e-003	0.0523	0.0703	1.1000e-004		2.4300e-003	2.4300e-003		2.2700e-003	2.2700e-003	0.0000	9.4006	9.4006	2.7400e-003	0.0000	9.4691
Paving	1.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.0000e-003**	**0.0523**	**0.0703**	**1.1000e-004**		**2.4300e-003**	**2.4300e-003**		**2.2700e-003**	**2.2700e-003**	**0.0000**	**9.4006**	**9.4006**	**2.7400e-003**	**0.0000**	**9.4691**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	5.2000e-004	1.6000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1831	0.1831	0.0000	3.0000e-005	0.1909
Worker	1.1900e-003	8.1000e-004	7.9000e-003	2.0000e-005	2.1600e-003	1.0000e-005	2.1700e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.7361	1.7361	6.0000e-005	6.0000e-005	1.7555
Total	**1.2100e-003**	**1.3300e-003**	**8.0600e-003**	**2.0000e-005**	**2.2200e-003**	**1.0000e-005**	**2.2300e-003**	**6.0000e-004**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**1.9192**	**1.9192**	**6.0000e-005**	**9.0000e-005**	**1.9464**

Appendix C

Wetland Delineation

Wetland Delineation

Manila Drainage Project

Manila Community Services District

November 16, 2022

The Power of Commitment

Wetland Delineation
Manila Drainage Project

This document has been prepared for:

Manila Community Services District

1901 Park Street

Manila, CA, 95521

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November 16, 2022

Contents

Tables

1. Introduction

GHD prepared this wetland delineation report of wetlands and Other Waters of the U.S. and/or State and accompanying appendices on behalf of the Manila Community Services District (MCSD or District), in support of the proposed Manila Flood Reduction and Drainage Enhancement Project (Project) to improve drainage and reduce flooding in Manila, California (**Appendix A; Figure 1**). This report supports the Project's environmental documentation and permitting. The proposed Project Area includes several locations in the unincorporated community of Manila (**Appendix A; Figure 2**). This report is subject to, and must be read in conjunction with, the limitations set out in Section 5, Special Terms and Conditions, and the assumptions and qualifications contained throughout the report.

1.1 Project Description

The MCSD proposes to make drainage improvements (hereafter Project) throughout the community of Manila, California (**Appendix A; Figure 1**). The Project will apply a community-wide approach to address persistent flooding and drainage problems caused by undersized, disconnected, and failing infrastructure. Simple solutions, consisting of vegetated bioswales, rain gardens, replacement of undersized and failing culverts, and new culverts in select locations are proposed. The Project, led by the MCSD, will incorporate multi-objective, multi-benefit project components that address flood reduction, ecosystem services, and resiliency to sea level rise and climate change. Existing bioswales will be restored to historical grades by removal of accumulated debris and sediment, new bioswales will be graded and planted with native species to connect existing drainage paths. Existing undersized and or failing culverts will be replaced with new, larger capacity culverts ranging from 12 to 36 inches in diameter. New culverts will be installed in select locations, ranging from 18 to 24 inches in diameter. Rain gardens will be implemented along roadsides as well at the Manila Community Center to replace a concrete courtyard.

To assist with preparation of the Project's California Environmental Quality Act (CEQA) document and the Project permitting, GHD delineated wetlands within the Project's Study Boundary (PSB); (**Appendix A; Figure 2**). The purpose of this report is to document the results of the July 21-22 and August 23, 2022 delineations and to provide information to support the Project's CEQA document.

1.2 Summary

GHD conducted the wetland delineation fieldwork on July 21-22 and August 23, 2022. The delineation was conducted within the Project Area (or Project Study Boundary [PSB]), as shown in **Appendix A; Figures 2 and 3**. Two private property parcels (APNs: 400-031-012 and 400-031-013) near the center of the PSB were delineated separately by O'Brien Biological Consultants on July 4, 2022 (OBC 2022). The results of that delineation have been included in this report.

The Project is in the Coastal Zone within the State jurisdiction of the California Coastal Commission (CCC), and within the Appeal and Local Jurisdiction, which is regulated by the Humboldt County Local Coastal Program under the Humboldt Bay Area Plan. The wetland delineation included the delineation of both United States Army Corps of Engineers (USACE) three-parameter wetlands and Coastal Act one-parameter wetlands based on the presence of wetland indicative vegetation, hydric soils, and/or wetland hydrology (either one of those parameters, or all three).

The wetland delineation identified four types of three-parameter wetlands with hydric soil, hydrophytic vegetation, and hydrology, and one-parameter wetlands throughout the PSB. Wetlands were mapped as shown in **Appendix A; Figure 3**. The total area of one-parameter wetland (Wetland 1) within the Project Area is 128,550 ft^2 (2.95 acres), and three-parameter wetlands (Wetlands 2-5) total 44,900 ft^2 (1.03 acre) (**Appendix A; Figure 3**).

1.3 Regulatory Background

1.3.1 Federal

Waters of the United States

The Code of Federal Regulations (CFR), 40 CFR § 230.3 states the following:

The term waters of the United States means:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(2) All interstate waters including interstate wetlands;
(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
(iii) Which are used or could be used for industrial purposes by industries in interstate commerce;
(4) All impoundments of waters otherwise defined as waters of the United States under this definition;
(5) Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;
(6) The territorial sea;
(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States. (40 CFR § 230.3).

Wetlands Definition

40 CFR § 230.3 continues and defines, "(t) The term wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas" (40 CFR § 230.3).

Wetlands Delineation Manual

The 1987 USACE Wetland Delineation Manual provides guidelines and methods to determine whether an area is a wetland subject to federal regulation under Section 404 of the Clean Water Act. The manual specifies that wetland hydrology, soil, and vegetation indicators must be present to identify a wetland (USACE 1987, p. 10). In addition, the Wetlands Delineation Manual states, "If hydrophytic vegetation is being maintained only because of man-induced wetland hydrology that would no longer exist if the activity (e.g., irrigation) were to be terminated, the area should not be considered a wetland," (USACE, 1987).

Federal Geographic Data Committee (FGDC) Wetland Classification Standard

The Classification of Wetlands and Deepwater Habitats of the United States (FGDC 2013), based on Cowardin et al. (1979), states that wetlands must have at least one of the three wetland attributes: predominantly hydrophytic vegetation, predominantly hydric soil, and hydrology. However, they state that all available information should be used, and all three attributes should be considered if they are present (FGDC 2013).

1.3.2 State

The State Water Resources Control Board's (SWRCB) April 2019 *Procedures for Discharges of Dredged or Fill Material to Waters of the State* says the following:

> *An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.*
>
> *The Water Code defines "waters of the state" broadly to include "any surface water or groundwater, including saline waters, within the boundaries of the state." "Waters of the state" includes all "waters of the U.S." The following wetlands are waters of the state:*

1) Natural wetlands,
2) Wetlands created by modification of a surface water of the state, and
3) Artificial wetlands that meet any of the following criteria:
  a) Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
  b) Specifically identified in a water quality control plan as a wetland or other water of the state;
  c) Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
  d) Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):
    i) Industrial or municipal wastewater treatment or disposal,
    ii) Settling of sediment,
    iii) Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
    iv) Treatment of surface waters,
    v) Agricultural crop irrigation or stock watering,
    vi) Fire suppression,
    vii) Industrial processing or cooling,
    viii) Active surface mining – even if the site is managed for interim wetlands functions and values,
    ix) Log storage,
    x) Treatment, storage, or distribution of recycled water, or
    xi) Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
    xii) Fields flooded for rice growing.

    All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not waters of the state. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state" (SWRCB, 2021).

The February 2020 Draft Guidance State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State further clarifies as follows:

> *Human activity can cause changes to the surrounding landscape (e.g., grading activities, road construction, direct hydromodification) such that wetlands form where wetlands did not previously exist. Where such artificial wetlands are now a relatively permanent part of the natural landscape, and are not subject to ongoing operation and maintenance, they are waters of the state. By requiring that the wetlands are relatively permanent, the framework excludes wetlands that are temporary or transitory. That they are part of the natural*

landscape also indicates the relative permanence of the wetlands and suggests that the wetland is self-sustaining without ongoing operation and maintenance activities, and provides similar ecosystem services as natural wetlands. By way of example, this category of wetlands includes situations where water flow is permanently redirected as the result of human activity, such as grading in another area, such that new wetlands form in areas that were previously dry. These wetlands may not be natural wetlands because they result from human activity and they were not formed by modifying a water of the state (rather they were an indirect result), but nevertheless they take on the function of natural wetlands such that they should be considered waters of the state. This category would not include artificial wetlands constructed for specific purposes listed in section II.3.d because the construction of the artificial wetlands would be too recent to be deemed "historic" and the artificial wetland would likely require ongoing maintenance such that they would not be deemed "relatively permanent," and/or the artificial wetland is not part of the "natural landscape" (SWRCB, 2020).

1.3.3 Coastal Zone – Local Coastal Program

The Project Area is within the County Jurisdiction of the Coastal Zone, which is regulated by Humboldt County under the Humboldt Bay Area Plan (HBAP) of the Humboldt County Local Coastal Program (HCPD 2022). The County will rely on the HBAP for issuance of a coastal development permit.

The HBAP (certified in 1982) uses the Coastal Act definition of wetlands (Ch.3, p.48), and states "No land use or development shall be permitted in areas adjacent to coastal wetlands, called Wetland Buffer Areas, which degrade the wetland or detract from the natural resource value. Wetland Buffer Areas shall be defined as:

(1) The area between a wetland and the nearest paved road, or the 40 foot contour line (as determined from the 7.5' USGS contour maps), whichever is the shortest distance, or,

(2) 250 feet from the wetland, where the nearest paved road or 40 foot contour exceed this distance, or

(3) Transitional Agricultural lands designated Agriculture Exclusive shall be excluded from the wetland buffer."

The HBAP provides specific examples of ESHA within the Humboldt Bay Area coastal zone (Ch.3, p.44):

1) Identification of Environmentally Sensitive Habitats

   a) Environmentally sensitive habitats within the Humboldt Bay Planning Area include:

      (1) Wetlands and estuaries, including Humboldt Bay and the mouth of the Mad River.

      (2) Vegetated dunes along the North Spit to the Mad River and along the South Spit.

      (3) Rivers, creeks, gulches, sloughs and associated riparian habitats, including Mad River Slough, Ryan Slough, Eureka Slough, Freshwater Slough, Liscom Slough, Fay Slough, Elk River, Salmon Creek, and other streams.

      (4) Critical habitats for rare and endangered species listed on state or federal lists.

2. Methodology

2.1 Wetland Delineation Approach

GHD environmental scientists conducted the wetland delineation on July 21-22 and August 23, 2022. To define a wetland, the USACE requires that vegetation, soil, and hydrology (three-parameters) all show wetland attributes (USACE 1987; USACE 2010). The CCC requires only one parameter of the three (hydric soils, wetlands vegetation or wetlands hydrology) to be present in order to define the site as a wetland (14 CCR 13577; CCC 2011). The wetland delineation used USACE criteria from the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (USACE 2010). The current standard field forms provided by the USACE (2010) were used to collect vegetation, soils, and hydrology data (**Appendix B**).

In potential three-parameter wetland areas, vegetation, soil, and hydrology data were generally collected in a transect across the upland/wetland boundary with two plots (upland/wetland) per transect. The naming convention used on datasheets to designate upland or wetland plots associated with a transect is -U or -W, respectively.

Wetland/upland boundaries and plots were mapped in the field with an Eos Arrow 100 Submeter Global Positioning System (GPS) Receiver with Global Navigation Satellite System (GNSS) and an iPad running ArcGIS Collector software. The wetland/upland boundary was recorded with the GPS unit as needed to map the wetland's spatial extent. The points were then connected in the office using ArcMap software for figure creation and the boundaries were clipped to the extent of the Project Area.

Due to the complexity of the PSB and the separation of survey teams, wetlands as identified in this report were not numbered in the field. Data sheet numbers were used to differentiate survey locations as follows: transects were labelled with a W#, transect number, and paired wetland and upland designations (e.g., W1-T1-W and W1-T1-U). When mapping a three-parameter wetland within a one-parameter wetland, the paired transect points would be labelled W#-T#-**W3** and W#-T#-**W1** to indicate the boundary from three-parameter (**W3**) to one-parameter wetlands (**W1**), in lieu of the upland/wetland boundary. Data sheets were not recorded for areas that were upland or one-parameter wetland with no transition to three-parameter wetlands. Appendix B contains all datasheets recorded during the delineation.

Two private property parcels (APNs: 400-031-012 and 400-031-013) near the center of the PSB were delineated separately by O'Brien Biological Consultants on July 4, 2022 (OBC 2022). The results of that delineation have been included in this report.

2.2 Vegetation

Vegetation data collection consisted of listing the dominant species in the herbaceous, shrub, and tree layer within a standard-sized plot determined by the strata layer. Nomenclature follows The Jepson Manual (Baldwin et al. 2012), which was cross-walked to federal standard nomenclature to identify the indicator status. The species' wetland indicator status for the Western Mountains, Valleys, and Coast Region was noted in the respective column, using the standard reference: National USACE 2020 Wetland Plant List (USACE 2020a). This list classifies species based on the probability that they are found in wetlands (USACE 1987) as follows:

- Obligate (OBL): almost always in wetlands (99% probability)
- Facultative Wetland (FACW): usually occurring in wetlands (67% to 99% probability)
- Facultative (FAC): commonly occurring in wetlands and uplands (34% to 66% probability of occurring in wetlands)
- Facultative Upland (FACU): usually occurring in uplands (1% to 33% probability of occurring in wetlands)
- Upland (UPL): upland obligate, rarely in wetlands (1% in wetlands)

Species that do not appear on the list are considered to be in the upland category (Lichvar et al. 2012). Standard procedures for documenting hydrophytic vegetation indicators were used per the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010). A complete list of plants documented at the site with respective wetland indicator status is included as **Appendix C**. photographs have been included as **Appendix D**. The separate Biological Resources Report prepared by GHD will contain the location and extent of mapped vegetation alliances and Sensitive Natural Communities within the Project Area.

2.3 Soils

Hydric soils were defined based on the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010) procedures in combination with the Natural Resources Conservation Service's (NRCS) definitions presented in Field Indicators of Hydric Soils in the United States (USDA/NRCS 2018). Soil pits were dug to an approximate depth of 14 inches. Data on soil color, texture, and redoximorphic features were recorded. Any observed redoximorphic features (iron concentrations) were noted along with their percentage within the soil matrix, and care was taken to distinguish chromas of 1 and 2 indicative of an iron-depleted soil within 12 inches of the soil surface (USACE 2010; USDA/NRCS 2016).

The Munsell Soil Color Book (COLOR 2000) was used to describe the soil colors for the entire depth of the test pit. Moist, natural soil aggregate (ped) surfaces, which had not been crushed, were used to determine the soil's color. Soils with low chroma were verified as being hydric or upland with Field Indicators of Hydric Soils in the United States (Version 8.2 2018).

2.3.1 Existing Soils Information

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) identifies three soil units within the Project Area (**Appendix A; Figure 4** and NRCS report in **Appendix E**). A brief map unit description, as generated by the NRCS, is provided for each soil unit below (NRCS 2022). Although NRCS soil mapping is informative, the scale is generally too broad to definitively characterize potential wetlands. Please see the full report included as **Appendix E** for complete details.

Urban land-Anthraltic Xerorthents association, 0 to 2 percent slopes

The Urban land-Anthraltic Xerorthents association, 0 to 2 percent slopes map unit composition contains: 80% urban land, industrial, and 20% Anthraltic Xerorthents and similar soils. This soil type comprises 98% (**Appendix A; Figure 4 and Appendix E**).

The Urban land-Anthraltic Xerorthents association can be found on fluviomarine terraces and the parent material is coarse-loamy fluviomarine deposits and/or coarse-loamy dredge spoils. Urban land-Anthraltic Xerorthents association consists of slightly gravelly loamy fine sand in the top horizon above sandy loam to 31 inches, with gravelly sand and sand in the deepest horizons. Urban land-Anthraltic Xerorthents association has a Land Capability Classification (LCC) of 8 without irrigation (with irrigation is unspecified), and is not rated as a hydric soil. Urban land does not have a drainage class, but the depth to water table is about 24 inches. The Anthraltic Xerorthents is moderately well drained and the depth to water table is 0-6 inches.

Lanphere, 2 to 75 percent slopes

The Lanphere, 2 to 75 percent slopes map unit composition contains: 85% Lanphere and similar soils, and 15% minor components (consisting of 10% Clambeach and 5% Samoa). This soil type comprises 1.9% of the PSB (**Appendix A; Figure 4** and **Appendix E**).

Lanphere soils can be found on longitudinal coastal dunes and the parent material is mixed eolian sands. Lanphere consists of slightly decomposed plant material in the top horizon above sand on all other horizons. Lanphere has a LCC of 7e without irrigation (with irrigation is unspecified), and is not rated as a hydric soil. Lanphere is somewhat excessively drained and the depth to water table is more than 80 inches.

Hydraquents-Wassents mucky silt loam, strongly saline, 0-3 percent slopes, very frequently flooded

The Hydraquents-Wassents mucky silt loam, strongly saline, 0-3 percent slopes map unit composition contains: 50% low tidal Hydraquents and similar soils, 40% Wassents and similar soils, and 10% minor components (consisting of marine water and high tidal Hydraquents). This soil type is on the shore of Humboldt Bay and comprises 0.01% of the PSB (**Appendix A; Figure 4 and Appendix E**).

Hydraquents-Wassents mucky silt loam can be found on tidal flats and the parent material is mucky, silty, and clayey estuarine deposits. This soil type consists of mucky silty clay loam on all horizons. Hydraquents-Wassents has an LCC of 8 without irrigation (with irrigation is unspecified), and is rated as a hydric soil. Hydraquents-Wassents is very poorly drained and the depth to water table is 0 inches.

2.4 Hydrology

GHD delineated wetlands within the PSB on July 21-22 and August 16, 2022. Rainfall for the entire 2022 Water Year was below normal totaling 25.66 inches at the end of July 2022. Precipitation in July was also below normal: 0.76 inch. A WETS table showing climate data for the Arcata Eureka Airport in McKinleyville, California is provided in **Appendix F**. Aerial photography and the National Wetland Inventory Mapper were referenced before conducting fieldwork (**Appendix A; Figure 5**) (NWI 2022). The flood hazard map is also included in **Appendix A; Figure 6** (FEMA 2022). Wetland hydrology indicators, such as drainage patterns, material deposits, soil saturation, high water table, or surface water presence, were recorded in the field.

3. Results

The PSB broadly contains four types of three-parameter wetlands, and one-parameter wetland (Wetland 1) consisting of stands of willow trees, wax myrtles, alders, and hydrophytic herbs. All wetlands in the PSB are within the jurisdiction of the CCC (**Table 1**). All three-parameter wetlands are jurisdictional to the USACE either through direct surficial connection to Humboldt Bay and ocean, or by sub-surface connection through the porous substrate and close proximity to the Bay. Additionally, all three-parameter wetlands meet the definition of Waters of the State and therefore are also under the jurisdiction of the North Coast Regional Water Quality Control Board (NCRWQCB). **Appendix A; Figure 3** show the results of the wetland delineations, and summaries of each wetland are presented in **Table 1** below.

Table 1 Wetlands within the Delineated Area and Potential Jurisdiction

Aquatic Resource Name	Wetland Type	Location	Aquatic Resource Size (ft^2)	Jurisdiction		
				USACE	NCRWQCB	CCC
Wetland 1	1-parameter	Scattered stands of willows, wax myrtle, red alder and hydrophytic herbs throughout Manila	**128,550 ft^2 (2.95 acres)**	No	No	Yes
Wetland 2	3-par Palustrine emergent ditches	Along Peninsula Road	**14,885 ft^2 (0.34 acre)**	Yes	Yes	Yes
Wetland 3	3-par Palustrine emergent wetlands	Between Victor Blvd. and shore, between Young Lane and shore.	**15,050 ft^2 (0.34 acre)**	Yes	Yes	Yes
Wetland 4	3-par Freshwater forested shrub wetland	Gully	**7,170 ft^2 (0.16 acre)**	Yes	Yes	Yes
Wetland 5	3-par Estuarine and marine wetland	Shore of Humboldt Bay	**7,795 ft^2 (0.18 acre)**	Yes	Yes	Yes
		Total Wetlands in Project Area	**173,450 ft^2 (3.98 acres)**			

3.1 One-parameter Wetlands

The majority of wetlands in the PSB were identified as one-parameter wetlands based on the presence of hydrophytic vegetation. Due to the lack of wetlands hydrology and hydric soils, these were determined to be one-parameter wetlands.

3.1.1 Wetland 1 ("W1")

One-parameter wetlands are scattered throughout the community of Manila around and juxtaposed next to palustrine emergent ditches, railroad tracks, drainage gullies, and natural habitat. These scattered and separate stands are all designated as Wetland 1 for quantification and mitigation purposes. The hydrophytic vegetation in these wetlands is generally characterized by Hooker's willow (*Salix hookeriana*), wax myrtle (*Morella californica*), and red alder (*Alnus rubra*) with various hydrophytic herbs in the understory and blackberry vines (*Rubus spp.*) in the vine layer. Wetland 1 comprises 128,550 ft^2 (2.95 acres) of the PSB. See **Table 2** below and attached data sheets in **Appendix B** for additional details.

Table 2 Summary of one-parameter wetland datasheets

Datasheet	Lat/Long	Dominant Tree/Shrub	Dominant Herbs	Dominant Vines
W2-T1-W1	40.850465, -124.161917	Hooker's willow (FACW)	Great horsetail (FACW), creeping buttercup (FAC)	N/A
W2-T3-W1	40.850815, -124.162653	Hooker's willow (FACW)	Great horsetail (FACW), bird's-foot trefoil (FAC)	N/A
W2-T4-W1	40.850030, -124.161096	Hooker's willow (FACW)	Hedge bindweed (FAC)	Himalayan blackberry (FAC)
W3-T1-W1	40.852930, -124.160454	Red alder (FAC), wax myrtle (FACW)	Hedge bindweed (FAC)	Himalayan blackberry (FAC)

Datasheet	Lat/Long	Dominant Tree/Shrub	Dominant Herbs	Dominant Vines
W4-T1-W1a	40.847115, -124.165926	Hooker's willow (FACW)	Slough sedge (OBL), great horsetail (FACW)	California blackberry (FACU), Himalayan blackberry (FAC)
W4-T1-W1b	40.847202, -124.166012	none	Velvet grass (FAC), ribwort plantain (FACU), bird's-foot trefoil (FAC)	Himalayan blackberry (FAC)
W4-T2-W1	40.851598, -124.162892	Hooker's willow (FACW)	Velvet grass (FAC), vernal sweet grass (FACU), rye grass (FAC), white clover (FAC)	California blackberry (FACU), Himalayan blackberry (FAC)
W5-T1-W1	40.853930, -124.161869	Hooker's willow (FACW)	Smallfruit bulrush (OBL)	California blackberry (FACU)
W5-T2-W1	40.853974, -124.161686	Sitka spruce (FAC)	California figwort (FAC)	California blackberry (FACU)

3.2 Three-parameter Wetlands

Four types of wetlands in the PSB met the criteria for three-parameter wetlands: palustrine emergent ditches, palustrine emergent wetlands, freshwater forested shrub wetland, and estuarine and marine wetland. Summaries of each three-parameter wetland are provided below, and area is provided in **Table 1**. Please see the USACE Data Forms in **Appendix B** for more details. The PSB contains a total of 44,900 ft^2 (1.03 acres) of three-parameter wetlands.

3.2.1 Wetland 2 ("W2")

Wetland 2 is a loosely connected series of three-parameter wetlands classified according to the Cowardin system as palustrine emergent ditches (FGDC 2013) alongside Peninsula Drive and the railroad tracks that run northeast/southwest through the community of Manila (**Appendix A; Figure 3)**. The surficial connection of these ditches to Humboldt Bay was not observed, but they are likely hydrologically linked to Humboldt Bay either surficially or subsurface through the porous substrate and proximity to the Bay. Wetland 2 occupies 14,885 ft^2 (0.34 acre) of the PSB.

Five plots were dug in ditches and wetlands collectively identified as Wetland 2. In general the tree or shrub stratum was dominated by Hooker's willow (FACW), the vine stratum was dominated by Himalayan blackberry (*Rubus armeniacus*, FAC) and/or California blackberry (*Rubus ursinus*, FACU), and the herb stratum was dominated by various hydrophytes including silverweed (*Argentina anserina*, OBL), slough sedge (*Carex obnupta*, OBL), water parsley (*Oenanthe sarmentosa*, OBL), and hedge bindweed (*Calystegia sepium*, FAC). Hydric soil indicators included hydrogen sulfide (A4), sandy redox (S5), and sandy gleyed matrix (S4). Wetland/hydrology indicators included high water table (A2), saturation (A3), water stained leaves (B9), drainage patterns (B10), and presence of reduced iron (C4). Please see **Table 3** below and attached data sheets in **Appendix B** for additional details.

Table 3 Data summary for soil pits in Wetland 2.

Datasheet	Lat/Long	Dominant Vegetation		Hydric Soil	Hydrology	Notes
W2-T4-W3	40.850022, -124.161046	Tree	Hooker's willow (FACW)	Depleted matrix	High water table, saturation	Soil wet to the touch, redox present. Organic matter decomposition also present independent of redox.
		Herb	Creeping buttercup (FAC)			
		Vine	N/A			
W4-T1-W3	40.847186, -124.165987	Shrub	Hooker's willow (FACW)	Hydrogen sulfide, Sandy gleyed matrix	High water table, water stained leaves, present of reduced iron	Thin layer of muck on top.
		Herb	Slough sedge (OBL)			
		Vine	N/A			
W4-T2-W3	40.851594, -124.162881	Shrub	Hooker's willow (FACW)	Hydrogen sulfide, Sandy redox	Presence of reduced iron	
		Herb	Slough sedge (OBL)			
		Vine	Him. blackberry (FAC)			
W5-T1-W3	40.853966, -124.161862	Tree	Hooker's willow (FACW)	Hydrogen sulfide	High water table, saturation	Strong sulphur odor, bright grey lower horizon.
		Herb	Water parsley (OBL)			
		Vine	Cal. blackberry (FACU)			
W5-T2-W3	40.853997, -124.161687	Tree	Sitka spruce (FAC)	Hydrogen sulfide	High water table, saturation	Soil predominantly sandy with gray coloring, some sulphur smell.
		Herb	Hedge bindweed (FAC)			
		Vine	Cal. blackberry (FACU)			

The surficial connection of the ditches in Wetland 2 to Humboldt Bay was not directly observed, but likely exists. If there is not direct surficial connection, three-parameter wetlands in sandy areas along the coast are typically considered to be jurisdictional by the USACE with the reasoning that the porous substrate enables subsurface hydrological connection with the ocean. Additionally, Wetland 2 meets the definition of Waters of the State and therefore is also under the jurisdiction of the NCRWQCB. Wetland 2 is within the jurisdiction of the CCC because it is within the Coastal Zone (**Table 1**).

3.2.2 Wetland 3 ("W3")

Wetland 3 includes two areas classified according to the Cowardin system as palustrine emergent wetlands that are adjacent to the wetlands on the shore of Humboldt Bay (FGDC 2013). Only one plot (investigating vegetation, soils and hydrology) was conducted in Wetland 3, in the coastal wetland off of Victor boulevard. At this location (W2-T4-W3) the tree stratum was dominated by Hooker's willow (FACW), and the herb stratum was dominated by creeping buttercup (*Ranunculus repens*, FAC). Hydric soil indicators included depleted matrix (F3), Wetland/hydrology indicators included high water table (A2), and saturation (A3). Wetland 3 occupies 15,050 ft^2 (0.34 acre) of the PSB. Please see **Table 4** below and attached data sheets in **Appendix B** for additional details.

No wetland transects were placed in the northern palustrine emergent wetland off of Young Lane at the north end of Manila. The vegetation in this wetland is dominated by hard-stem tule (*Schoenoplectus acutus*, OBL), and water parsley (OBL) with Hooker's willow (FACW) at the edges. The wetland areas on either side of Young Lane contain human-dug ditches, but these wetlands were likely present before the construction of the road and ditches and are not themselves artificial.

Table 4 Data summary for Wetland 3 transect.

Datasheet	Lat/Long	Dominant Vegetation		Hydric Soil	Hydrology	Notes
W2-T4-W3	40.850022, -124.161046	Tree	Hooker's willow (FACW)	Depleted matrix	High water table, saturation	Soil wet to the touch, redox present. Organic matter decomposition also present independent of redox.
		Herb	Creeping buttercup (FAC)			
		Vine	N/A			

Both areas in Wetland 3 are surficially hydrologically connected to Humboldt Bay and are jurisdictional to the USACE, the NCRWQCB, and the CCC (**Table 1**).

3.2.3 Wetland 4 ("W4")

Wetland 4 is a forested gully between the Manila Community Park and Mill Street that flows into Humboldt Bay. This wetland is classified according to the Cowardin classification system as a freshwater forested shrub wetland until it reaches Wetland 5 on the shore of Humboldt Bay (FGDC 2013). One plot labelled W3-T1-W3 was conducted at the northwest end of the gully and is summarized below. Wetland 4 occupies 7,170 ft^2 (0.16 acre) of the PSB. This total area includes the 1,290 ft^2 that was delineated by O'Brien Biological Consultants on July 4, 2022. Please see attached data sheets in **Appendix B** for additional details.

Table 5 Data summary for Wetland 4 transect.

Datasheet	Lat/Long	Vegetation		Hydric Soil	Hydrology	Notes
W3-T1-W3	40.852910, -124.160424	Tree	Red alder (FAC)	Redox dark surface	Water stained leaves, presence of reduced iron, drainage patterns, geomorphic position	Lower horizon mucky and wet.
		Herbs	Hedge bindweed (FAC)			
		Vines	Himalayan blackberry (FAC)			

Wetland 4 is surficially hydrologically connected to Humboldt Bay and is jurisdictional to the USACE, the NCRWQCB, and the CCC (**Table 1**).

3.2.4 Wetland 5 ("W5")

Wetland 5 includes four disjunct areas of the PSB that are located on the shore of Humboldt Bay. All wetlands within the PSB grouped in Wetland 5 are below the High Tide Line of 9.3 feet (NAVD 88). No transects or soil pits were placed in Wetland 5. Shoreline locations in Wetland 5 are classified according to the Cowardin classification system as estuarine and marine wetlands (FGDC 2013). Wetland 5 includes two culverts on the shore of the Bay south of Manila, one culvert on the shore of the Bay near Young Lane north of Manila, and the shoreline portions of the PSB off of Victor Boulevard and Peerless Avenue. Wetland 5 occupies 7,795 ft^2 (0.18 acre) of the PSB.

Vegetation in Wetland 5 generally included Lyngbye's sedge (*Carex lyngbyei*, OBL), salt grass (*Distichlis spicata*, FACW), hard-stem tule (*Schoenoplectus acutus*, OBL), and pickleweed (*Salicornia pacifica*, OBL). All areas in Wetland 5 are within Humboldt Bay and are jurisdictional to the USACE, the NCRWQCB, and the CCC (**Table 1**).

4. Conclusions

The wetland delineation for the Manila Flood Reduction and Drainage Enhancement Project, completed on July 21-22 and August 23, 2022, determined the extent of wetlands within the Project Area based on hydrophytic vegetation, hydric soils, and wetland hydrology using methods and indicators outlined in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (USACE 2010). A total of 1.03 acres of three-parameter wetlands (Wetlands 2-5) are jurisdictional by the USACE either through direct surficial connection to Humboldt Bay and the ocean, or by sub-surface connection through the porous substrate and close proximity to the Bay. Additionally, all three-parameter wetlands meet the definition of Waters of the State and therefore are also under the jurisdiction of the North Coast Regional Water Quality Control Board (NCRWQCB). All wetlands in the PSB (6.93 acres) are within the Coastal Zone and within the jurisdiction of the CCC. (**Appendix A; Figures 4, 5**). Data forms are attached showing sample plot data collected in transects across wetland boundaries (**Appendix B**).

5. Special Terms and Conditions

5.1 Purpose of this Report

GHD prepared this report for the Manila Community Services District (District), and the District may only use and rely on this report for the purpose agreed upon between GHD and the District, as set out in the scope and contract for work effort reported herein. GHD Inc. is not liable for any action arising out of the reliance of any third party on the information contained within this report. GHD otherwise disclaims responsibility to any entity other than the District arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

5.2 Scope and Limitations

This report does not authorize any individuals to develop, fill, or alter the delineated wetlands. Verification of the delineation by jurisdictional agencies is necessary prior to the use of this report for planning and development purposes. A USACE, agency-stamped, delineation map, and a jurisdictional approval letter are required to signify confirmation of delineation results. In situations where a field investigation determines that no jurisdictional wetlands occur, jurisdictional concurrence with these findings is recommended.

The delineation conclusions were based on the information available during the period of the investigation, which took place June 15 and 16, 2022. The opinions, conclusions, and any recommendations in this report are based on conditions encountered and information reviewed by the date of preparation of the report. Site conditions may change after the date of this report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change unless contracted to do so.

This report: has been prepared by GHD for Manila Community Services District and may only be used and relied on by Manila Community Services District for the purpose agreed between GHD and Manila Community Services District as set out in section 5.1 of this report.

GHD otherwise disclaims responsibility to any person other than Manila Community Services District arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 5.1 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

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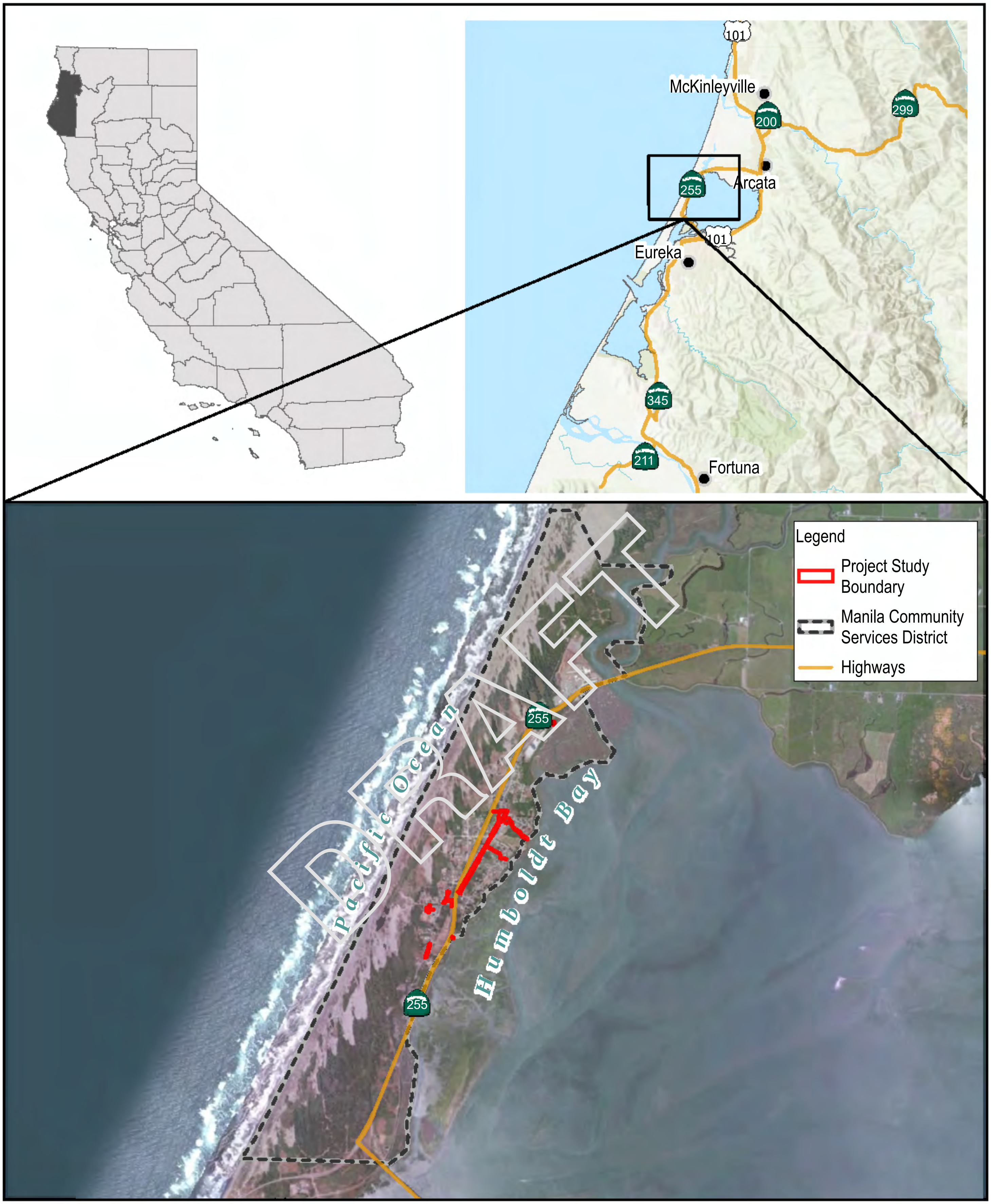
Appendices

Appendix A

Figures



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Map Projection: Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Grid: WGS 1984 Web Mercator Auxiliary Sphere

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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No. **12572691**
Revision No. **-**
Date **Nov 2022**

Vicinity Map

FIGURE 1

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Paper Size ANSI A

0 250 500 750 1,000

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No.	**12572691**
Revision No.	**-**
Date	**Nov 2022**

Project Study Boundary

FIGURE 2

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Wetland_Delineation\12572691_Wetland_Delineation.aprx , 12572691_002_Project_Study_Boundary
Print date: 16 Nov 2022 - 14:14

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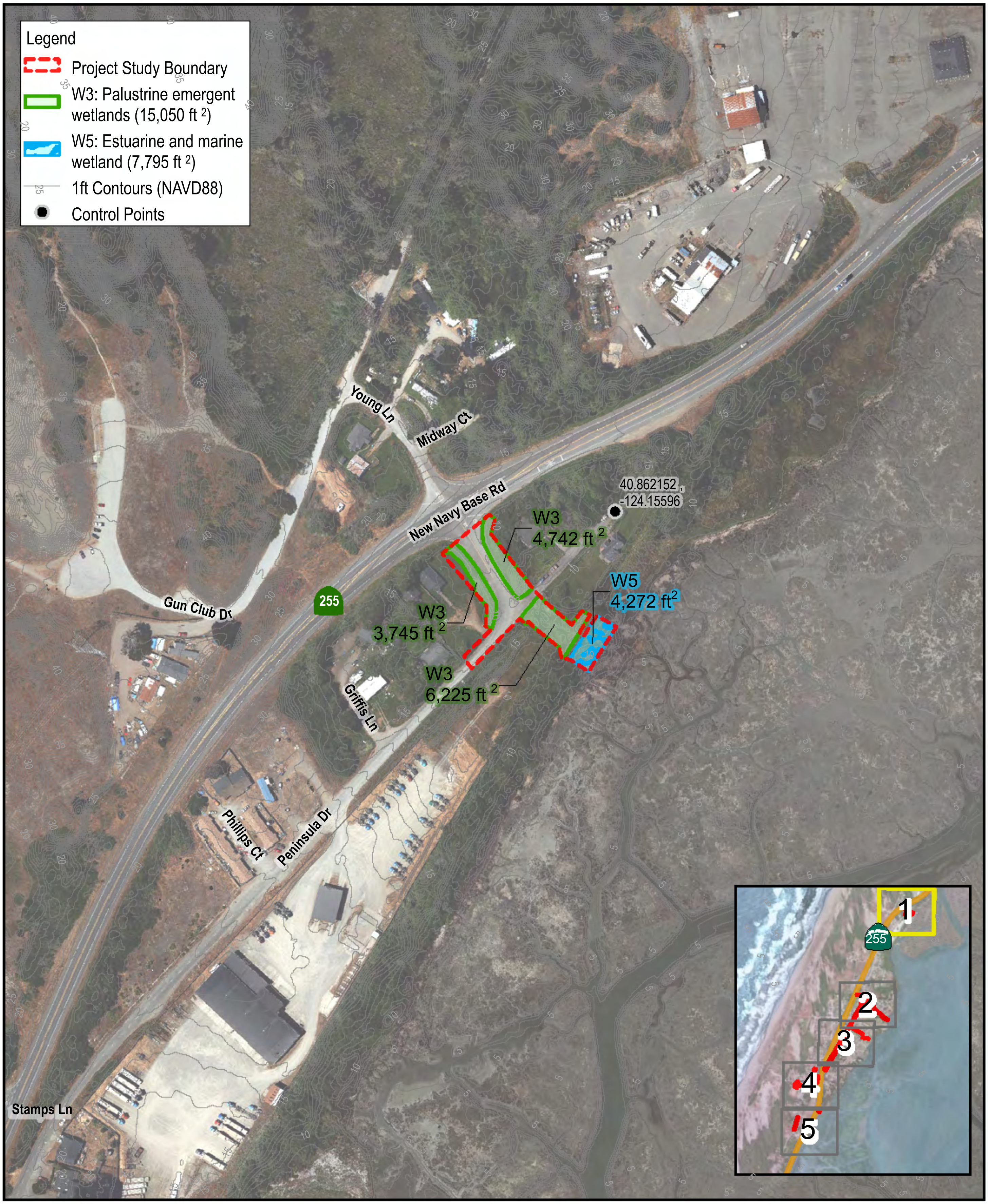

Paper Size ANSI A

0 50 100 150 200 250

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Manila Community Services District
Manila Flood Reduction &
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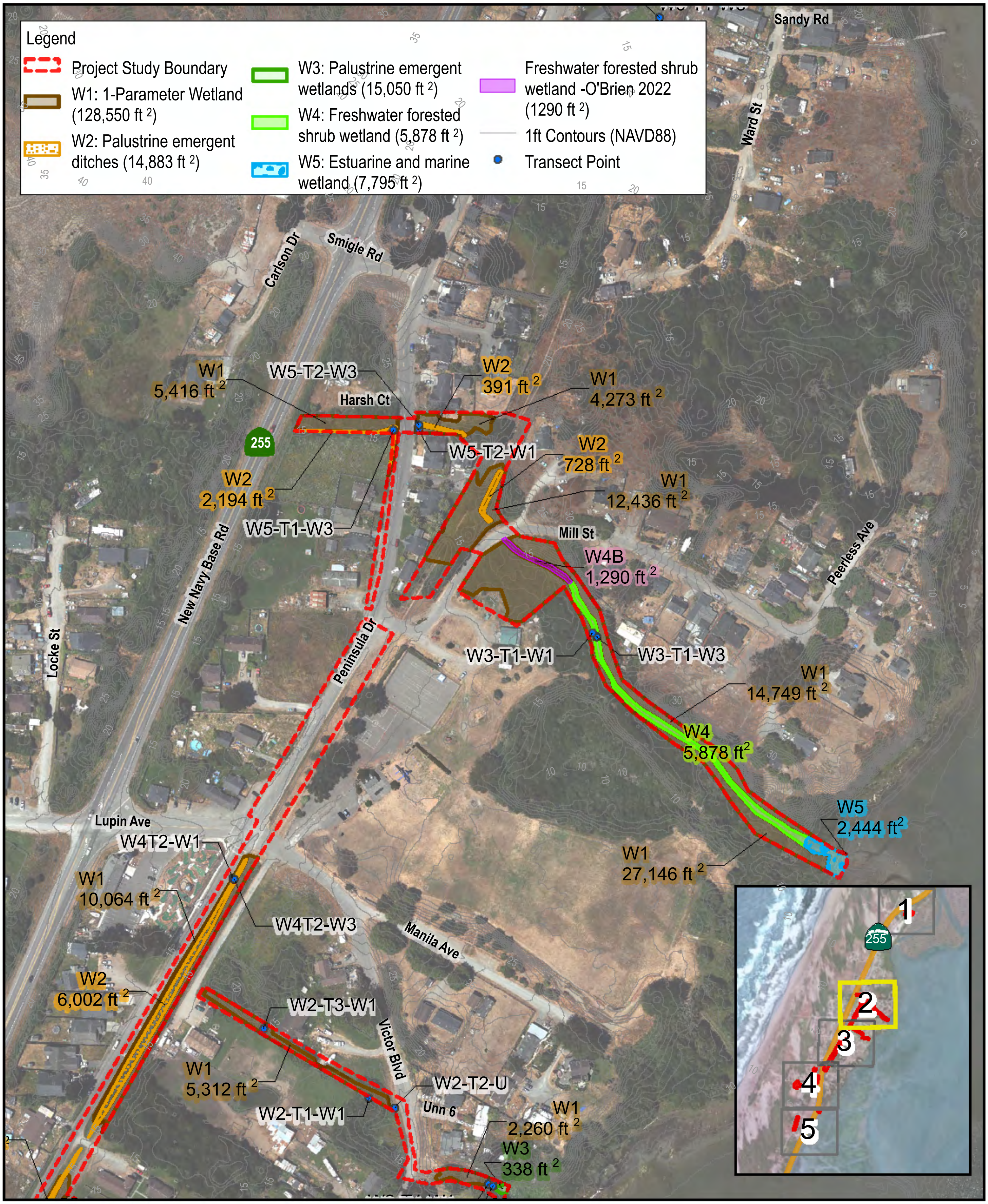
Project No. **12572691**
Revision No. **-**
Date **Nov 2022**

Wetland Delineation

FIGURE 3-1

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Wetland_Delineation\12572691_Wetland_Delineation.aprx , 12572691_003_Wetland_Delineation_MapSeries
Print date: 16 Nov 2022 - 14:20



Paper Size ANSI A

0 50 100 150 200 250

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No. **12572691**
Revision No. **-**
Date **Nov 2022**

Wetland Delineation

FIGURE 3-2

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Wetland_Delineation\12572691_Wetland_Delineation.aprx , 12572691_003_Wetland_Delineation_MapSeries
Print date: 16 Nov 2022 - 14:21

Paper Size ANSI A

0 50 100 150 200 250

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No. **12572691**
Revision No. **-**
Date **Nov 2022**

Wetland Delineation

FIGURE 3-3

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Wetland_Delineation\12572691_Wetland_Delineation.aprx , 12572691_003_Wetland_Delineation_MapSeries
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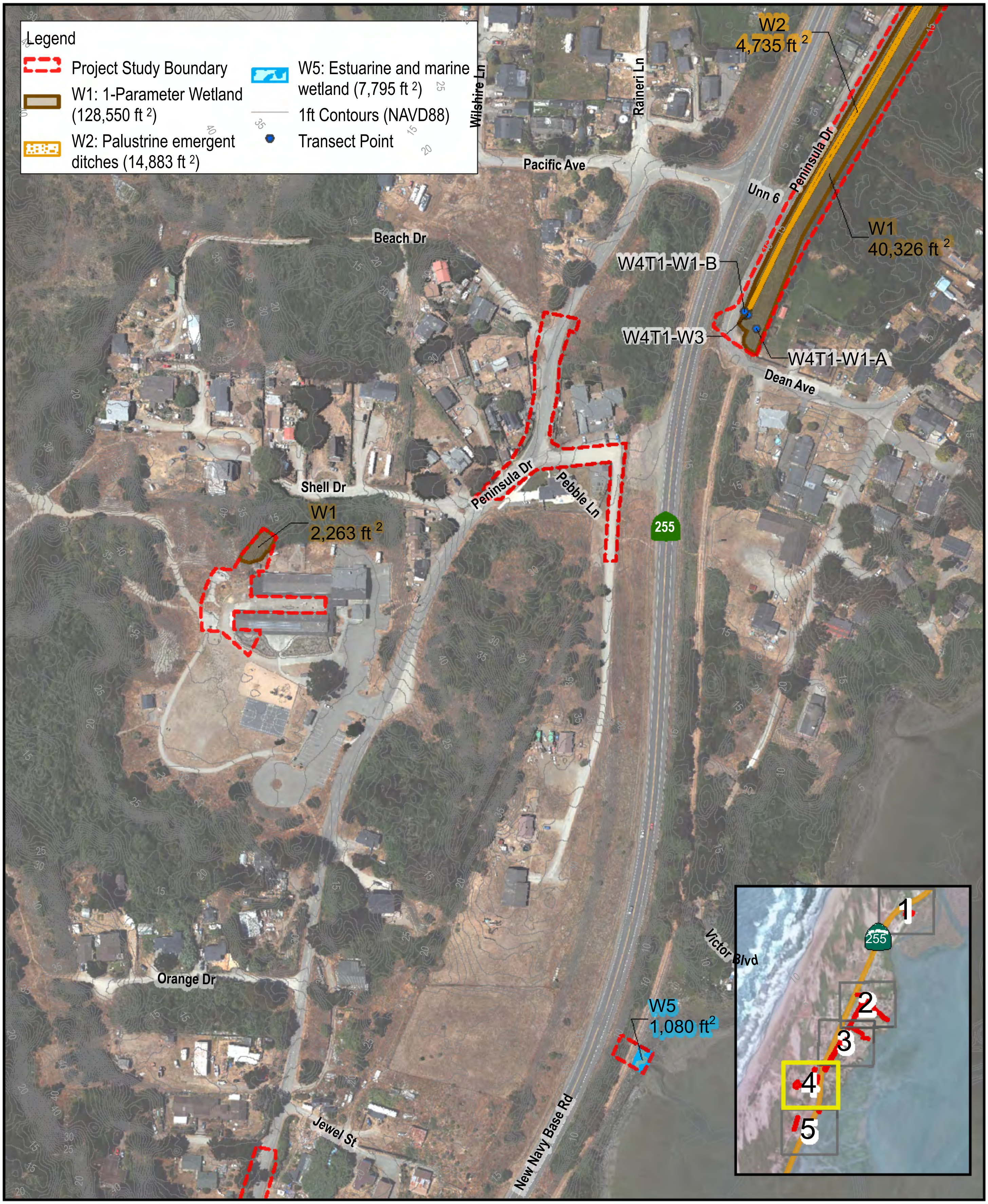

Paper Size ANSI A

0 50 100 150 200 250

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Wetland Delineation

Project No. **12572691**
Revision No. **-**
Date **Nov 2022**

FIGURE 3-4

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Wetland_Delineation\12572691_Wetland_Delineation.aprx - 12572691_003_Wetland_Delineation_MapSeries
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Paper Size ANSI A

0 50 100 150 200 250

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Wetland Delineation

Project No. **12572691**
Revision No. **-**
Date **Nov 2022**

FIGURE 3-5

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Wetland_Delineation\12572691_Wetland_Delineation.aprx , 12572691_003_Wetland_Delineation_MapSeries
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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

Manila Community Services District
Manila Flood Reduction & Drainage Enhancement Project

NRCS Soils

Project No. **12572691**
Revision No. **-**
Date **Nov 2022**

FIGURE 4

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Wetland_Delineation\12572691_Wetland_Delineation.aprx , 12572691_004_NRCS_Soils
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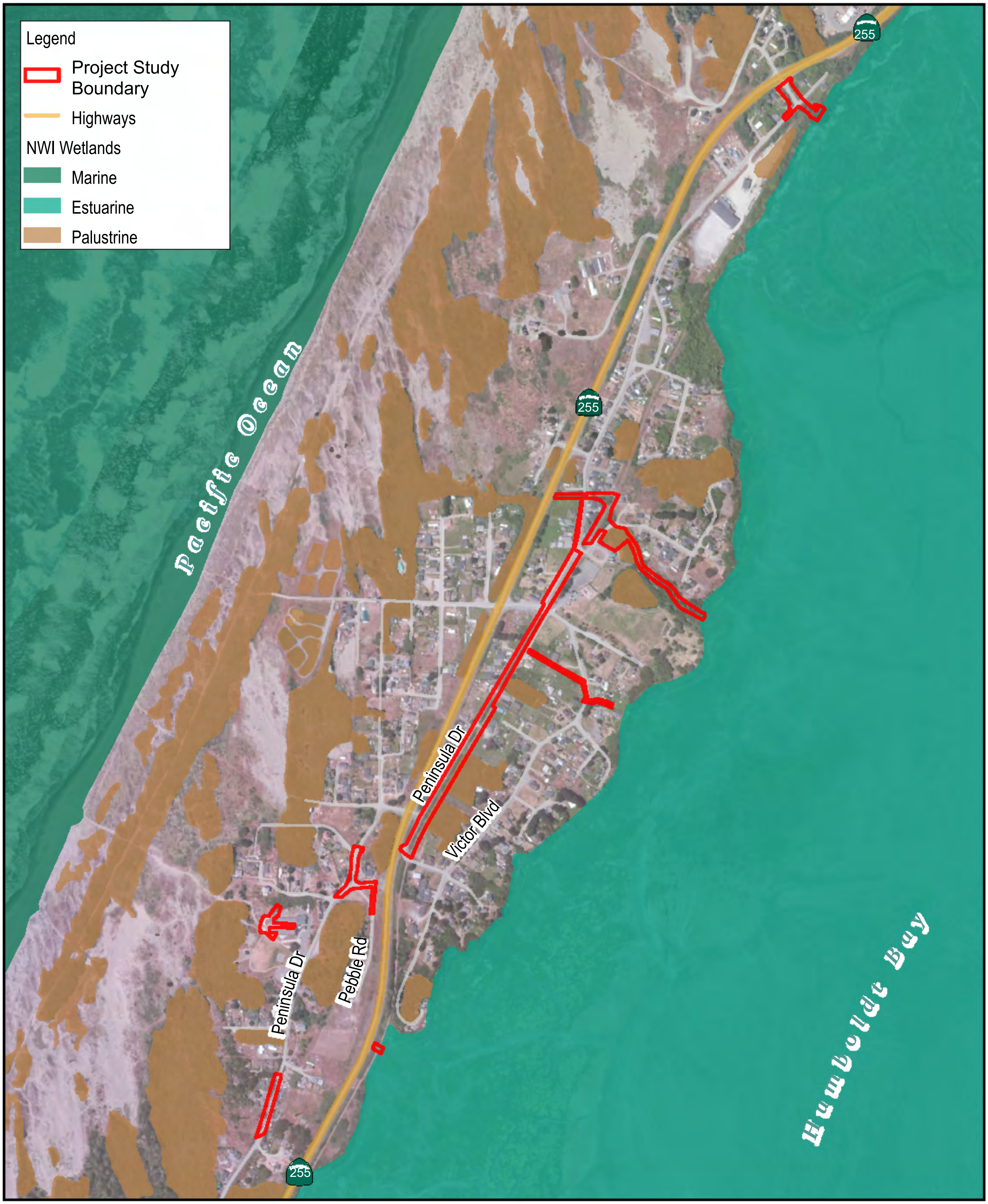

Paper Size ANSI A

0 250 500 750 1,000

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Manila Flood Reduction &
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Project No. **12572691**
Revision No. **-**
Date **Nov 2022**

National Wetland Inventory

FIGURE 5

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Wetland_Delineation\12572691_Wetland_Delineation.aprx , 12572691_005_NWI
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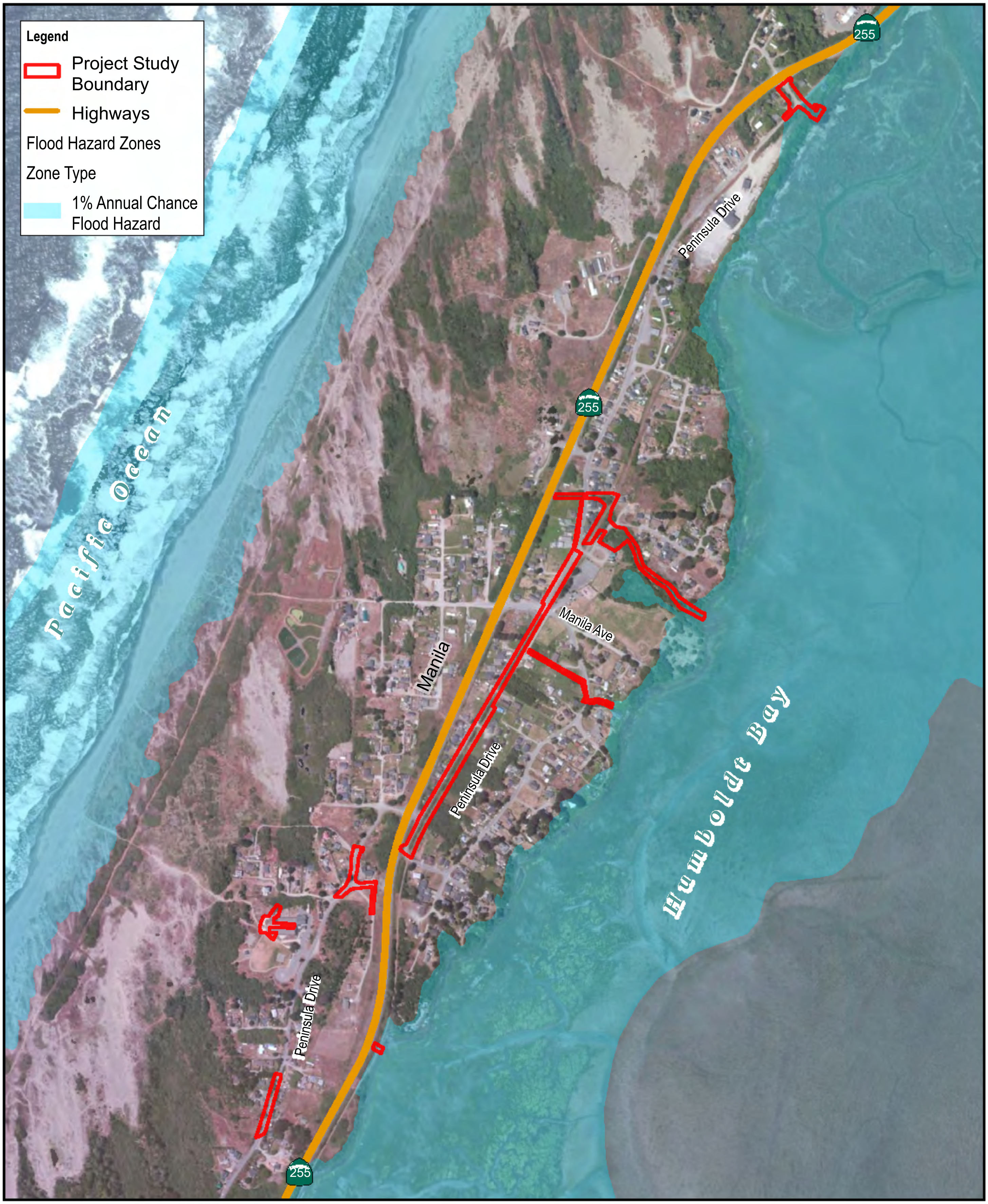

Paper Size ANSI A

0 250 500 750 1,000

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No. **12572691**
Revision No. **-**
Date **Nov 2022**

FEMA Flood Hazard Map

FIGURE 6

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Wetland_Delineation\12572691_Wetland_Delineation.aprx - 12572691_006_FEMA
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Appendix B

Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Manila / Humboldt Sampling Date: 7/20/22
Applicant/Owner: Humboldt County State: CA Sampling Point: W2-T1-W1
Investigator(s): J. Cipra / K. McNamee Section, Township, Range: ____
Landform (hillslope, terrace, etc.): ____ Local relief (concave, convex, none): ____ Slope (%): ____
Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: ____ NWI classification: ____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____
Hydric Soil Present?	Yes ____	No ✓
Wetland Hydrology Present?	Yes ✓	No ____

Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks:
2-par wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	30	yes	FACW
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1m)			
1. Iris pseudacorus	2		OBL
2. Equisetum telmateia	4	yes	FACW
3. Lotus corniculatus	3		FAC
4. Ranunculus repens	5	yes	FAC
5. Holcus lanatus	2		FAC
6. Juncus bufonius	<1		FACW
7. Festuca perenne	<1		FAC
8.			
9.			
10.			
11.			
= Total Cover	18		
Woody Vine Stratum (Plot size: 1 m)			
1. Rubus ursinus	40	yes	FACU
2.			
= Total Cover			

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: W2-T1-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/1	99%	—	—	—	—	silt loam	1% sand; O.M/roots present
11-17	5Y 2.5/1	100%	—				sandy clay loam	sandy, wet, grayish

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2) *
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___
Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓ ?

Remarks: Lower horizon - had color that looked like redox, however appears to be orange due to OM decomposition. - lower horizon felt wet
lower passed alpha alpha test

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
X Presence of Reduced Iron (C4) - alpha
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
X Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
X Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___
Water Table Present? Yes ___ No X Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 17"

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: passed alpha alpra test. Lower horizon felt wet

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Humboldt County Sampling Date: 7/20/22

Applicant/Owner: Humboldt County State: CA Sampling Point: W2-T2-U

Investigator(s): ______ Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ______	No ✓	Is the Sampled Area within a Wetland?	Yes ______ No ✓
Hydric Soil Present?	Yes ______	No ✓		
Wetland Hydrology Present?	Yes ______	No ✓		

Remarks:
Upland due to dominance of Anthoxanthum

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	______ = Total Cover		
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
	______ = Total Cover		
Herb Stratum (Plot size: 1 m)			
1. Holcus lanatus	20	yes	FAC
2. Anthoxanthum odoratum	70	yes	FACU
3. Hypochaeris radicata	1		FAC
4. Juncus lescurii	2		FACW
5. Plantago lanceolata	1		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	94 = Total Cover		
Woody Vine Stratum (Plot size: 1 m)			
1. Rubus ursinus	1		FACU
2.			
	1 = Total Cover		
% Bare Ground in Herb Stratum ______			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ______ No ✓

Remarks:

SOIL

Sampling Point: W2-T2-wu (1x)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/2	100	—	—	—	—	Sand	Sand w/ cobbles

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ________

Water Table Present? Yes ____ No X Depth (inches): ________

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ________

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Humboldt County Sampling Date: 7/20/22
Applicant/Owner: Humboldt County State: CA Sampling Point: W2-43-W1
Investigator(s): J. Cipra, K. McNamee Section, Township, Range: ______
Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______
Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______
Soil Map Unit Name: ______ NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______
Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ______	Is the Sampled Area within a Wetland? Yes ✓ No ______
Hydric Soil Present?	Yes ______ No ______	
Wetland Hydrology Present?	Yes ______ No ✓	

Remarks:
1-par wetland

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft R)			
1. Salix hookeriana	70	yes	FACW
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1 M)			
1. Equisetum telmateia	20	yes	FACW
2. Lotus corniculatus	40	yes	FAC
3. Juncus effusus	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover			
Woody Vine Stratum (Plot size: 1 M)			
1. Rubus ursinus	65	yes	FACU
2.			
= Total Cover			

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ______

Remarks:

SOIL

Sampling Point: W2-T3 - W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y2.5/1	100%					Sandy loam	top layer of soil
1-18	2.5Y4/1	99.5	2.5Y6/8	0.5%			Sand	very little redox.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? Yes ____ No X

Remarks:

OM decomposition looks like redox; however faint specks of redox visible. (very small amount)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) **(LRR A)**
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) **(LRR A)**
___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ______

Water Table Present? Yes ____ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ______

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Humboldt Co. Sampling Date: 7/20/22
Applicant/Owner: Humboldt Co State: CA Sampling Point: W2-T4-w1
Investigator(s): J. Cipra, K. McNamee Section, Township, Range: ____
Landform (hillslope, terrace, etc.): ____ Local relief (concave, convex, none): ____ Slope (%): ____
Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: ____ NWI classification: ____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ____ No ✓		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks:
1-par wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	60	yes	FACW
2.			
3.			
4.			
	60 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1 m)			
1. Calystegia sepium	5	yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: 1 m)			
1. Rubus armeniacus	30	yes	FAC
2.			
	30 = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x 1 =	____
FACW species	____	x 2 =	____
FAC species	____	x 3 =	____
FACU species	____	x 4 =	____
UPL species	____	x 5 =	____
Column Totals:	____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: W2-T4-W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y2.5/1						Clayloam	dark + wet
8-18	5Y3/1	95%	2.5Y 5/6	5%	C	M	Sandyloam	OM + redox present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

Cobbles + boulder at 18" on bottom

Not hydric soil (F3) b/c not deep enough (needs 6" thickness) deeper than 10"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 8"

slightly into top horizon

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ditch immediately north of spot. Redox present in ditch

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Humboldt Co. Sampling Date: 7/20/22

Applicant/Owner: Humboldt Co State: CA Sampling Point: W2-T4-W3

Investigator(s): J. Cipra, K. McNamee Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Drainage ditch Local relief (concave, convex, none): concave Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ______	Is the Sampled Area within a Wetland? Yes ✓ No ______
Hydric Soil Present?	Yes ✓ No ______	
Wetland Hydrology Present?	Yes ✓ No ______	

Remarks:
3-par wetland

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft r)			
1. Salix hookeriana	40	yes	FACW
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1 M)			
1. Ranunculus repens	95	yes	FAC
2. Conium maculatum	2		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
		= Total Cover	
% Bare Ground in Herb Stratum ______			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ______

Remarks:

SOIL

Sampling Point: W2-T4-W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	5Y 2.5/1	100%					Siltyclay loam	wet+sticky
2-18	5Y 4/1	90	2.5Y 5/6	10%	C	M	Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- __ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:
soil wet to the touch the entire pit.
Redox present. OM decomposition also present independent of redox. (photo)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- / Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- __ Salt Crust (B11)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) **(LRR A)**
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) **(LRR A)**
- __ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ______

Water Table Present? Yes X No ___ Depth (inches): 16"

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ______

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Water table visible
soil saturated through entire pit

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Humboldt Co Sampling Date: 7/20/22
Applicant/Owner: Humboldt Co. State: CA Sampling Point: W3-T1-W1
Investigator(s): J. Cpo, K. McNamee Section, Township, Range: ______
Landform (hillslope, terrace, etc.): Slope above ditch Local relief (concave, convex, none): ______ Slope (%): ______
Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______
Soil Map Unit Name: ______ NWI classification: ______
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______
Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	Is the Sampled Area within a Wetland? Yes ___ No ___
Hydric Soil Present?	Yes ___ No ✓	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:
1-par wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	60	yes	FAC
2. Morella californica	30	yes	FACW
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Crocosmia	15		FAC
2. Calystegia sepium	25	yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 1 m)			
1. Rubus armeniacus	30	yes	FAC
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ______

Remarks:

SOIL

Sampling Point: W3-T1-U 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100%					loam	Friable
6-16	2.5Y 4/4	100%					Sand	sandy mix of colored grains

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Humboldt Co Sampling Date: 7/20/22

Applicant/Owner: Humboldt Co State: CA Sampling Point: W3-T1-W3

Investigator(s): J Cipra, K. McNamee Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): concave Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ______
Hydric Soil Present?	Yes ✓	No ______
Wetland Hydrology Present?	Yes ✓	No ______

Is the Sampled Area within a Wetland? Yes ______ No ______

Remarks:
3-par wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	60	yes	FAC
2. Morella californica	10		FACW
3.			
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Oenanthe sarmentosa	20	yes	OBL
2. Crocosmia	25	yes	FAC
3. Calystegia sepium	2		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	47	= Total Cover	
Woody Vine Stratum (Plot size: 1 m)			
1. Rubus armeniacus	5	yes	FAC
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ______

Remarks:

SOIL Sampling Point: W3-T1-W 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR2.5/1	100%					Silt loam	full of O.M nodules
4-14	2.5Y3/1	85%	7.5YR5/6	15%	C	M/PL	Sandy loam	sandy full of om
14-18	Gley 1 4/N	98%	7.5YR5/6	2%	C	M	Silt loam	mucky

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4) @ 14-18"
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 14-18

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Lower horizon mucky and wet.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Manila/Arcata/Hum Co Sampling Date: 7/22/22

Applicant/Owner: MCSD State: CA Sampling Point: W4T1-W3

Investigator(s): K. Lundgren Section, Township, Range: 3, 5N, 1W

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Quaternary Sand deposits NWI classification: freshwater shrub

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	Is the Sampled Area within a Wetland?	Yes ✓ No ___
Hydric Soil Present?	Yes ✓ No ___		
Wetland Hydrology Present?	Yes ✓ No ___		

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 4' x 8')			
1. Salix hookeriana	20	Y	FACW
2.			
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 1 m²)			
1. Carex obnupta	25	Y	OBL
2. Juncus lesueurii	1		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	26	= Total Cover	
Woody Vine Stratum (Plot size: ______)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

4 - 2.5Y 2.5/1 10YR ?2 ?

SOIL

Sampling Point: WH71-W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	—	—	—	—	—	—	sandy clay loam	organic matter (muck)
4-12	GLY 3/N	100	—	—	—	—	sandy	no clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ✓ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ___

Remarks:
thin layer of muck atop

alpha dipyr positive

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ______

Water Table Present? Yes ✓ No ___ Depth (inches): 2"

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ______

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Arcata/HumCo Sampling Date: 7/22/22

Applicant/Owner: MCSD State: CA Sampling Point: W4-T1-W1 A?

Investigator(s): K Lundgren Section, Township, Range: 3, 5N, 1W

Landform (hillslope, terrace, etc.): slope, ditch Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): A Lat: ___ Long: ___ Datum: ___

Soil Map Unit Name: Quaternary sand deposits NWI classification: freshwater shrub

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	Is the Sampled Area within a Wetland?	Yes ___ No ✓
Hydric Soil Present?	Yes ___ No ✓		
Wetland Hydrology Present?	Yes ___ No ✓		

Remarks:

CCC 1-par wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: NA)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 10x10')			
1. Salix hookeriana	35	Y	FACW
2.			
3.			
4.			
5.			
= Total Cover	35		
Herb Stratum (Plot size: 1m²)			
1. Carex obnupta	5	Y	OBL
2. Equisetum telmateia	15	Y	FACW
3. Anthoxanthum odoratum	1		FACU
4. Briza maxima	1		FAC
5. Vicia sativa	1		UPL
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	28		
Woody Vine Stratum (Plot size: r=10')			
1. Rubus armeniacus	20	Y	FAC
2. Rubus ursinus	10	Y	FACU
= Total Cover	30		

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 4/5 = 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes Y No ___

Remarks:

SOIL

Sampling Point: W4-T1-W1-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	90					loam	10% O.M + roots
2-16	2.5Y 3/2	100%					Sandy loam	- mostly sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____________
Depth (inches): ____________

Hydric Soil Present? Yes ____ No X

Remarks:

upper horizon has some soil formation; lower horizon entirely sand

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (except **MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) **(LRR A)**
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) **(LRR A)**
___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ______
Water Table Present? Yes ____ No X Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ______

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology present although lower in elevation compared to adjacent RR track.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Arcata / Hum Co Sampling Date: 7/22/22

Applicant/Owner: MCSD State: CA Sampling Point: W4TI-W18

Investigator(s): K. Lundgren Section, Township, Range: 3, 5N, 1W

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): A Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Quaternary sand deposits NWI classification: freshwater shrub

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ______
Hydric Soil Present?	Yes ______	No ✓
Wetland Hydrology Present?	Yes ______	No ✓

Is the Sampled Area within a Wetland? Yes ______ No ✓

Remarks:

CCC 1-par wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 1 m²)			
1. Anthoxanthum odoratum	10		FACU
2. Holcus lanatus	35	Y	FAC
3. Plantago lanceolata	15	Y	FACU
4. Equisetum telmateia	5		FACW
5. Lotus corniculatus	25	Y	FAC
6. Vicia sativa	1		
7. Trifolium repens	9		FAC
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 1 m²)			
1. Rubus armeniacus	20	Y	FAC
2.			
= Total Cover			

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 3/4 = 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ______

Remarks:

SOIL

Sampling Point: W4T1-W1-B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
1-12"	2.5Y 4/2	100	NA				Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______
Water Table Present? Yes ___ No ✓ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Arcata / Hum Co Sampling Date: 7/22/22

Applicant/Owner: MCSD State: CA Sampling Point: W4T2-W3

Investigator(s): K. Lindgren, M. Schwarz Section, Township, Range: 3, 5N, 1W

Landform (hillslope, terrace, etc.): roadside drainage ditch Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): A Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Quaternary sand deposits NWI classification: freshwater shrub

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	Is the Sampled Area within a Wetland? Yes ✓ No ___
Hydric Soil Present?	Yes ✓ No ___	
Wetland Hydrology Present?	Yes ✓ No ___	

Remarks: 3-par

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ______)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' x 10')			
1. Salix hookeriana	10	Y	FACW
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 1 m²)			
1. Carex obnupta	44	Y	OBL
2. Anthoxanthum odoratum	2		FACU
3. Juncus balticus	10	Y	FACW
4. Holcus lanatus	3	Y	FAC
5. Ranunculus repens	1		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: 1 m²)			
1. Rubus armeniacus	25	Y	FAC
2. Rubus ursinus	10	Y	FACU
	35	= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 5/6 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: W4T2-W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 3/2	100	—	—	—	—	sandy loam	
6-10	2.5Y 3/2	95%	10YR 3/6	5%			sand	
10-13	2.5Y 3/2	80%	10YR 3/6	20%			sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ✓ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: geomorphic position

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Arcata/Hum Co Sampling Date: 7/22/22

Applicant/Owner: MCSD State: CA Sampling Point: WMT2-W1

Investigator(s): K Lundgren, M. Schwarz Section, Township, Range: 3, 5N, 1W

Landform (hillslope, terrace, etc.): roadside ditch Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): A Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: Quaternary sand deposits NWI classification: Freshwater/forested shrub wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___
Hydric Soil Present?	Yes ___	No ✓
Wetland Hydrology Present?	Yes ___	No ✓

Is the Sampled Area within a Wetland? Yes ___ No ✓

Remarks: Qualifies as 1-par wetland per CCC

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' x 10')			
1. Salix hookeriana	8	Y	FACW
2.			
3.			
4.			
5.			
	8	= Total Cover	
Herb Stratum (Plot size: 1m²)			
1. Holcus lanatus	45	Y	FAC
2. Anthoxanthum odoratum	5	Y	FACU
3. Festuca perennis	20	Y	FAC
4. Trifolium repens	2	Y	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	72	= Total Cover	
Woody Vine Stratum (Plot size: 1m²)			
1. Rubus ursinus	2	Y	FACU
2. Rubus armeniacus	5	Y	FAC
	7	= Total Cover	

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 5/7 = 71% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: W4T2-W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	2.5Y 3/2	100%	—	—	—	—	sandy loam	
7-13	2.5Y 3/2	100%	—	—	—	—	Gravelly sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
✓ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ______
Depth (inches): ______

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) (LRR A)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (LRR A)
___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______
Water Table Present? Yes ___ No ✓ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Humboldt Co Sampling Date: 7/21/22

Applicant/Owner: Humboldt Co. State: CA Sampling Point: W5-T1-W1

Investigator(s): J. Cipra K. McNamee Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______ Soil ______ or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______ Soil ______ or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ______		Is the Sampled Area within a Wetland? Yes ✓ No ______
Hydric Soil Present? Yes ✓ No ______		
Wetland Hydrology Present? Yes ______ No ✓		

Remarks:

2 - par wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	20	yes	FACW
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Scirpus microcarpus	15	yes	OBL
2. Ranunculus repens	2		
3. Lotus corniculatus	2		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size: 1 m)			
1. Rubus ursinus	10	yes	FACU
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ______

Remarks:

SOIL

Sampling Point: WS-T1-W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/1	100					Silt loam	soil w/some OM.
4-18	Gley 1 3/10Y	75%	7.5YR 4/6	25%	C	M	Sandy loam	Sandy soil w/ a lot of redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- __ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3) - doesn't appear to meet value/chroma
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Clear sandy lower horizon w/ a lot of redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- __ Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- __ Salt Crust (B11)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) **(LRR A)**
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) **(LRR A)**
- __ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Located upslope of drainage ditch.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Humboldt Co Sampling Date: 7/21/21

Applicant/Owner: Humboldt Co. State: CA Sampling Point: W5-T1-W3

Investigator(s): J. Cipra K. McNamee Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ______ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ______	Is the Sampled Area within a Wetland?	Yes ✓ No ______
Hydric Soil Present? Yes ✓ No ______		
Wetland Hydrology Present? Yes ✓ No ______		

Remarks:
Ditch w/ standing water

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
1. Salix hookeriana	25	yes	FACW
2.			
3.			
4.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Scirpus microcarpus	15		OBL
2. Oenanthe sarmentosa	25	yes	OBL
3. Lotus corniculatus	1		
4. Anthoxanthum odoratum	1		
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	42	= Total Cover	
Woody Vine Stratum (Plot size: 1 m)			
1. Rubus ursinus	3	yes	FACU
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	______	x 1 =	______
FACW species	______	x 2 =	______
FAC species	______	x 3 =	______
FACU species	______	x 4 =	______
UPL species	______	x 5 =	______
Column Totals:	______ (A)		______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ______

Remarks:

SOIL

Sampling Point: WS-T1-W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y 2.5/1	100%					Silt loam	very wet
5-14	Gley 1 3.5/N	100%					Sandy loam	Sulfur smelling, sandy, grey

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No __

Remarks: Strong sulfur odor; bright grey lower horizon

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- __ Salt Crust (B11)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) (**LRR A**)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes __ No __ Depth (inches): __

Water Table Present? Yes X No __ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes X No __ Depth (inches): 1

Wetland Hydrology Present? Yes X No __

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila Drainage City/County: Humboldt Co. Sampling Date: 7/21/22
Applicant/Owner: Humboldt Co. State: ____ Sampling Point: W5-T2-W3
Investigator(s): J. Cipra, K. McNamee Section, Township, Range: ____
Landform (hillslope, terrace, etc.): ____ Local relief (concave, convex, none): ____ Slope (%): ____
Subregion (LRR): ____ Lat: ____ Long: ____ Datum: ____
Soil Map Unit Name: ____ NWI classification: ____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
3-par wetland

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft R)			
1. Picea sitchensis	15	yes	FAC
2. Morella californica	10		FACW
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1 M)			
1. Calystegia sepium	25	yes	FAC
2. Oenanthe sarmentosa	8		OBL
3. Scirpus microcarpus	2		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size: 1 M)			
1. Rubus ursinus	8	yes	FACU
2.			
		= Total Cover	
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: WS-T2-W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 2.5/1	100	—	—	—	—	silty loam	om intermixed
2-16	Gley 1 3/10Y	100	—	—	—	—	sandy loam	grey, wet, w/odor

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soil Present? Yes X No ____

Remarks:
Soil predominantly sandy w/ grey coloring (not as bright as in other locations) w/ some sulfur smell.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- __ Salt Crust (B11)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) (**LRR A**)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes X No ____ Depth (inches): 16

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 8

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manila drainage City/County: Humboldt Co Sampling Date: 7/21/22

Applicant/Owner: Humboldt Co State: CA Sampling Point: W5-T2-W1

Investigator(s): J. Cipra, K. McNamee Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: ______ Long: ______ Datum: ______

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___
Hydric Soil Present?	Yes ___	No ✓
Wetland Hydrology Present?	Yes ___	No ✓

Is the Sampled Area within a Wetland? Yes ✓ No ___

Remarks:
1-par wetland

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft R)	Absolute % Cover	Dominant Species?	Indicator Status
1. Morella californica	12		FACW
2. Picea sitchensis	25	yes	FAC
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ______)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Scrophularia californica	6	yes	FACW
2. Oenanthe sarmentosa	1		OBL
3. Equisetum telmateia	2		FACW
4. Stachys rigida	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	14	= Total Cover	
Woody Vine Stratum (Plot size: 1 m)			
1. Rubus ursinus	85	yes	FACU
2.			
	85	= Total Cover	

% Bare Ground in Herb Stratum ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ______	x 1 = ______
FACW species ______	x 2 = ______
FAC species ______	x 3 = ______
FACU species ______	x 4 = ______
UPL species ______	x 5 = ______
Column Totals: ______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: WS-T2-W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	OM-Duff							
1-12	2.5Y3.5/2	100%					Sand	sand grains-

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

Sandy fill material. Color is average of sand grain colors

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C

On-site Plant list

Scientific Name	Common Name	Status	Family	Status
Agave sp.	agave	Non-native	Agavaceae	
Carprobrotus chilensis	sea fig	Non-native	Aizoaceae	
Alisma triviale	Northern water plantain	Native	Alismataceae	OBL
Atriplex prostrata	spear-leaved orache	Non-native	Amaranthaceae	FAC
Salicornia pacifica	pickleweed	Native	Amaranthaceae	OBL
Allium triquetrum	three-cornered leek	Non-native	Amaryllidaceae	
Allium unifolium	ornamental onion	Non-native	Amaryllidaceae	
Amarillis belladona	naked ladies	Non-native	Amaryllidaceae	
Daucus carota	wild carrot	Native	Apiaceae	FACU
Hydrocotyl ranunculoides	floating pennywort	Non-native	Apiaceae	OBL
Oenanthe sarmentosa	water parsley	Native	Apiaceae	OBL
Vinca major	periwinkle	Non-native	Apocynaceae	FACU
Ilex aquifolium	English holly	Non-native	Aquifoliaceae	FACU
Lemna sp.	duckweed	Native	Araceae	OBL
Lysichiton americanus	skunk cabbage	Native	Araceae	OBL
Zantedescia aethiopica	calla lily	Non-native	Araceae	
Hedera helix	English ivy	Non-native	Araliaceae	FACU
Cordyline australis	New Zealand cabbage tree	Non-native	Asparagaceae	
Arctotheca calendula	Cape weed	Non-native	Asteraceae	
Baccharis pilularis	coyote brush	Native	Asteraceae	
Bellis perennis	daisy	Non-native	Asteraceae	
Chamomilla swaveolus	chamomile	Non-native	Asteraceae	
Cirsium vulgare	bull thistle	Non-native	Asteraceae	FACU
Conyza canadensis	horseweed	Non-native	Asteraceae	
Corethrogyne filaginifolia	sandaster	Native	Asteraceae	
Delairea odorata	cape/German ivy	Non-native	Asteraceae	FAC
Gamochaeta ustulata	featherweed	Native	Asteraceae	
Gnaphalium palustre	cudweed	Native	Asteraceae	FACW
Helminthotheca echioides	prickly oxtongue	Non-native	Asteraceae	FAC
Hypochaeris radicata	cat's ear	Non-native	Asteraceae	FACU
Jaumea carnosa	marsh jaumea	Native	Asteraceae	OBL
Leucanthemum vulgare	oxe eye daisy	Non-native	Asteraceae	FACU
Matricaria discoidea	pineapple weed	Native	Asteraceae	FACU
Solidago spathulata	goldenrod	Native	Asteraceae	FACU
Soliva sessilis	field burweed	Non-native	Asteraceae	FAC
Sonchus oleraceus	prickly lettuce	Non-native	Asteraceae	UPL

Scientific Name	Common Name	Status	Family	Status
Symphyotrichum chilense var. chilense	common California aster	Native	Asteraceae	FAC
Taraxacum officinale	dandelion	Non-native	Asteraceae	FACU
Athyrium filix-femina	lady fern	Native	Athyriaceae	
Alnus rubra	red alder	Native	Betulacaea	FAC
Echium candicans	tower of jewels	Non-native	Boranginaceae	
Symphytum officianalis	comfrey	Non-native	Boranginaceae	
Brassica rapa	common mustard	Non-native	Brassicaceae	FACU
Cardamine hirsuta	hairy bittercress	Native	Brassicaceae	FACU
Raphanus raphinastrum	wild radish	Non-native	Brassicaceae	
Lonicera involucrata	twinberry	Native	Caprifoliacea	FAC
Lonicera japonica	Japanese honesuckle	Non-native	Caprifoliacea	FAC
Cardionema ramosissimum	sand mat	Native	Caryophyllaceae	
Limonium californicum	sea lavender	Native	Caryophyllaceae	OBL
Polycarpa tetraphyllum	fourleaf allseed	Non-native	Caryophyllaceae	
Silene gallica	common catchfly	Non-native	Caryophyllaceae	
Spergula arvensis	spurry	Non-native	Caryophyllaceae	
Spergularia rubra	red sandspurry	Non-native	Caryophyllaceae	FAC
Stellaria media	chickweed	Non-native	Caryophyllaceae	FACU
Calystegia sepium	morning glory	Non-native	Convolvulaceae	FAC
Crassula connata	pigmy weed	Native	Crassulaceae	FAC
Hesperocyparis macrocarpa	Monterey cypress	Non-native	Cupressaceae	
Sequoia sempervirens	redwood	Native	Cupressaceae	
Carex lyngbyei (2B.2)	Lyngbye's sedge	Native	Cyperaceae	OBL
Carex obnupta	slough sedge	Native	Cyperaceae	OBL
Cyperus eragrostis	tall flatsedge	Native	Cyperaceae	FACW
Eleocharis sp.	spikesedge	Native	Cyperaceae	
Isolepis cernua	low bulrush	Native	Cyperaceae	OBL
Schoenoplectus californicus	California bulrush	Native	Cyperaceae	OBL
Scirpus microcarpus	small fruit bulrush	Native	Cyperaceae	OBL
Pteridium aquilinum	brackenfern	Native	Dennstaedtiaceae	FACU
Dryopteris arguta	wood fern	Native	Dryopteridaceae	
Polystichum munitum	Western sword fern	Native	Dryopteridaceae	FACU
Equisetum laevigatum	smooth horsetail	Native	Equisetaceae	FACW
Equisetum telmateia	great horsetail	Native	Equisetaceae	FACW
Acacia dealbata	silver wattle	Non-native	Fabaceae	
Acacia melanoxylon	Australian blackwood	Non-native	Fabaceae	

Scientific Name	Common Name	Status	Family	Status
Acmispon parviflorus	small-flowered lotus	Native	Fabaceae	
Cytisus scoparius	Scotch broom	Non-native	Fabaceae	
Fumaria capreolata	white-ramping fumitory	Non-native	Fabaceae	
Lathyrus latifolius	sweet pea	Non-native	Fabaceae	
Lathyrus tingitanus	tangier pea	Non-native	Fabaceae	
Lotus corniculatus	big trefoil	Non-native	Fabaceae	FAC
Lupinus arboreus	yellow bush lupine	Non-native	Fabaceae	
Lupinus bicolor	miniature lupine	Native	Fabaceae	
Medicago arabica	spotted medic	Non-native	Fabaceae	
Medicago polymorpha	burr clover	Non-native	Fabaceae	FACU
Trifolium arvense	hare's foot clover	Non-native	Fabaceae	
Trifolium dubium	lesser trefoil	Non-native	Fabaceae	FACU
Trifolium pratense	red clover	Non-native	Fabaceae	FACU
Trifolium repens	white clover	Non-native	Fabaceae	FAC
Trifolium subterraneum	subterranean clover	Non-native	Fabaceae	
Trifolium wormskioldii	cows clover	Non-native	Fabaceae	FACW
Vicia behnghalense	purple vetch	Non-native	Fabaceae	
Vicia hirsuta	hairy vetch	Non-native	Fabaceae	
Vicia nigricans	giant vicia	Non-native	Fabaceae	FACU
Vicia sativa	common vetch	Non-native	Fabaceae	UPL
Erodium cicutarium	redstem filaree	Non-native	Geraniaceae	
Erodium moschatum	whitestem filaree	Non-native	Geraniaceae	
Geranium dissectum	cutleaf geranium	Non-native	Geraniaceae	
Geranium molle	dove's foot geranium	Non-native	Geraniaceae	
Geranium robertianum	herb robert	Non-native	Geraniaceae	FACU
Malva neglecta	cheeseweed	Non-native	Geraniaceae	
Escallonia rubra	red claws	Non-native	Grossulariaceae	
Crocosmia sp.	crocosmia	Non-native	Iridacaea	FAC
Iris douglasiana	Douglas iris	Native	Iridacaea	
Iris pseudacorus	bearded iris	Non-native	Iridacaea	OBL
Juncus balticus	wire rush	Native	Juncaceae	FACW
Juncus bolanderi	Bolander's rush	Native	Juncaceae	OBL
Juncus breweri	Brewer's rush	Native	Juncaceae	FACW
Juncus bufonius	toad rush	Native	Juncaceae	FACW
Juncus effusus	common rush	Native	Juncaceae	FACW
Juncus hesperius	bog rush	Native	Juncaceae	FACW

Scientific Name	Common Name	Status	Family	Status
Juncus lescurii	dune rush	Native	Juncaceae	FACW
Triglochin maritima	saltmarsh arrowgrass	Native	Juncaginaceae	OBL
Mentha pulegium	pennyroyal	Non-native	Lamiaceae	OBL
Mentha spicata	spearmint	Non-native	Lamiaceae	FACW
Prunella vulgaris	common self-heal	Non-native	Lamiaceae	FACU
Stachys chamissonis	coastal hedgenettle	Native	Lamiaceae	FACW
Stachys rigida	rough hedgenettle	Native	Lamiaceae	FACW
Linum bienne	blue flax	Non-native	Linaceae	
Malva arborea	tree mallow	Non-native	Malvaceae	
Melianthus major	honey flower	Non-native	Melianthaceae	
Claytonia perfoliata	niner's lettuce	Native	Montiaceae	FAC
Morella californica	California wax myrtle	Native	Myricaceae	FACW
Eucalyptus globulus	blue gum	Non-native	Myrtaceae	
Fuchsia sp.	fuchsia	Non-native	Myrtales	
Epilobium ciliatum	northern willow herb	Native	Onagraceae	FACW
Oxalis articulata	pink oxalis	Non-native	Oxalidaceae	
Escscholzia californica	California poppy	Native	Papaveraceae	
Escscholzia californica ssp. maritima	seaside California poppy	Native	Papaveraceae	
Erythranthe guttata	yellow monkey flower	Native	Phrymaceae	OBL
Picea sitchensis	Sitka spruce	Native	Pinaceae	FAC
Pinus contorta	beach pine	Native	Pinaceae	FAC
Pinus radiata	Monterey pine	Non-native	Pinaceae	
Plantago coronopus	cutleaf plantago	Non-native	Plantaginaceae	FAC
Plantago lanceolata	ribwort plantain	Non-native	Plantaginaceae	FACU
Plantago major	broadleaf plantain	Non-native	Plantaginaceae	FAC
Triphysaria pusilla	dwarf owl's clover	Native	Plantaginaceae	
Veronica anagallis-aquatica	water speedwell	Non-native	Plantaginaceae	OBL
Veronica arvensis	wall speedwell	Non-native	Plantaginaceae	FACU
Agrostis stolonifera	creeping bentgrass	Non-native	Poaceae	FAC
Aira caryophyllea	silver hairgrass	Non-native	Poaceae	FACU
Alopecurus saccatus	Pacific foxtail	Native	Poaceae	FACW
Anthoxanthum odoratum	vernal sweet grass	Non-native	Poaceae	FACU
Avena barbata	slender wild oat	Non-native	Poaceae	
Avena sativa	oats	Non-native	Poaceae	UPL
Briza maxima	rattlesnake grass	Non-native	Poaceae	
Bromus carinatus	California brome	Native	Poaceae	

Scientific Name	Common Name	Status	Family	Status
Bromus catharticus	rescue grass	Non-native	Poaceae	
Bromus diandrus	ripgut brome	Non-native	Poaceae	
Bromus hordaceus	hairy brome	Non-native	Poaceae	FACU
Cortaderia jubata	pampas grass	Non-native	Poaceae	FACU
Dactylis glomerata	orchard grass	Non-native	Poaceae	FACU
Distichlis spicata	salt grass	Native	Poaceae	FACW
Festuca arundinacea	reed fescue	Non-native	Poaceae	FAC
Festuca bromoides	fescue	Non-native	Poaceae	
Festuca perenne	Italian rye grass	Non-native	Poaceae	FAC
Glyceria declinata	small sweet grass	Non-native	Poaceae	FACW
Hainardia cylindrica	hard grass	Non-native	Poaceae	FACW
Holcus lanatus	soft chess	Non-native	Poaceae	FAC
Hordeum sp.	barley	Non-native	Poaceae	
Phleum pratense	timothy grass	Non-native	Poaceae	FAC
Phyllostachys sp.	bamboo	Non-native	Poaceae	
Poa annua	annual bluegrass	Non-native	Poaceae	FAC
Poa confinis	coastline bluegrass	Native	Poaceae	
Poa macrantha	seashore bluegrass	Native	Poaceae	FACU
Poa pratensis	Kentucky bluegrass	Non-native	Poaceae	FAC
Spartina densiflora	dense cordgrass	Non-native	Poaceae	OBL
Eriogonum latifolium	beach buckwheat	Native	Polygonaceae	
Muehlenbeckia sp.	wire vine	Non-native	Polygonaceae	
Polygonum paronychia	beach knotweed	Native	Polygonaceae	
Rumex acetosella	sheep sorrel	Non-native	Polygonaceae	FACU
Rumex crispus	curly dock	Non-native	Polygonaceae	FAC
Rumex occidentalis	western dock	Native	Polygonaceae	FACW
Polypodium calirhiza	California polypody	Native	Polypodiaceae	
Lysimachia arvensis	scarlet pimpernel	Non-native	Primulaceae	FAC
Lysimachia arvensis	scarlet pimpernel	Non-native	Primulaceae	FAC
Ranunculus repens	buttercup	Non-native	Ranunculaceae	FAC
Frangula purshiana	cascara sagrada	Native	Rhamnaceae	FAC
Cotoneaster sp.	cotoneaster	Non-native	Rosaceae	
Crataegus monogyna	common hawthorn	Non-native	Rosaceae	FAC
Fragaria chiloensis	beach strawberry	Native	Rosaceae	FACU
Potentilla anserina	silverweed	Native	Rosaceae	OBL
Prunus sp.	apple?	Non-native	Rosaceae	

Scientific Name	Common Name	Status	Family	Status
Rosa sp.	ornamental rose	Non-native	Rosaceae	
Rubus armeniacus	Himalayan blackberry	Non-native	Rosaceae	FAC
Rubus ursinus	California blackberry	Native	Rosaceae	FACU
Galium aparine	cleavers	Non-native	Rubiaceae	FACU
Salix hookeriana	Hooker's willow	Native	Salicaceae	FACW
Salix lasiandra	shining willow	Native	Salicaceae	FACW
Salix lasiolepis	arroyo willow	Native	Salicaceae	FACW
Myriophyllum aquaticum	parrot feather	Non-native	Saxifragaceae	OBL
Tolmiea menziesii	piggyback plant	Native	Saxifragaceae	FAC
Buddleja davidii	butterfly bush	Non-native	Scrophulariaceae	FACU
Scrophularia californica	California figwort	Native	Scrophulariaceae	FAC
Tropaeolum majus	garden nasturtium	Non-native	Tropaeolaceae	UPL
Typha latifolia	broadleaved cattail	Native	Typhaceae	OBL
Soleirolia soleirolii	baby's tears	Non-native	Urticaceae	

Appendix D

Site Photographs

Photo 1. View one-parameter wetland surrounding railroad tracks parallel to Peninsula Drive, May 16, 2022.

Photo 2. View of three-parameter Wetland 2 ditch (below yellow arrow) at plot W5-T2-W3, July 21, 2022.

Photo 3. Plot location for W5-T1-W3 for three-parameter Wetland 2 ditch, July 22, 2022.

Photo 4. Plot location of W2-T1-W1: one-parameter Wetland 1, July 21, 2022.

Photo 5. Plot location for W2-T4-W3 in Wetland 3: three-parameter palustrine emergent wetland July 21, 2022.

Photo 6. View of Wetland 4, three-parameter freshwater forested shrub wetland near plot W3-T1-W3, May 24, 2022.

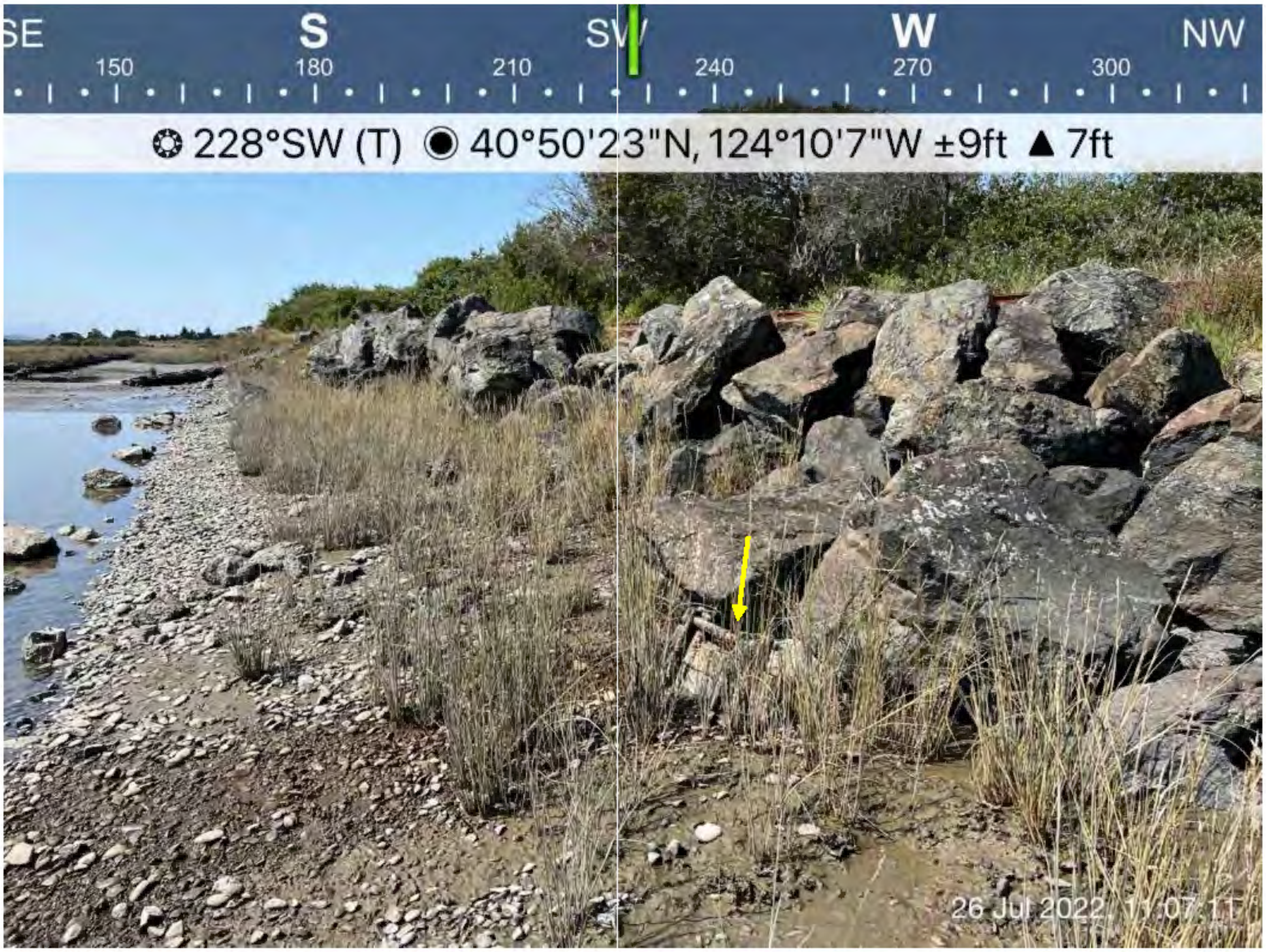

Photo 7. Southernmost culvert (below yellow arrow) on the shore of Humboldt Bay in estuarine marine wetland, July 26, 2022.

Photo 8. Estuarine marine wetland on shore of Humboldt Bay northeast of the Manila Community Park, May 4, 2022.

Photo 9. View of the three-parameter palustrine emergent Wetland 3 on either side of Young Lane at the north end of Manila, August 23, 2022.

Photo 10. View east of three-parameter palustrine emergent Wetland 3 at Young Lane, August 23, 2022.

Appendix E

NRCS Custom Soil Resource Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for
Humboldt County, Central Part, California

12572691 Soil Report V2

November 14, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:13,400 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0, 150, 300, 600, 900

Feet: 0, 500, 1000, 2000, 3000

Map projection: Web Mercator   Corner coordinates: WGS84   Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 9, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 1, 2022—Jun 19, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
156	Lanphere, 2 to 75 percent slopes	0.2	1.9%
1009	Hydraquents-Wassents mucky silt loam, strongly saline, 0-3 percent slopes, very frequently flooded	0.0	0.0%
1014	Urban land-Anthraltic Xerorthents association, 0 to 2 percent slopes	8.2	98.0%
Totals for Area of Interest		**8.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Humboldt County, Central Part, California

156—Lanphere, 2 to 75 percent slopes

Map Unit Setting

National map unit symbol: 221w7
Elevation: 0 to 80 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Lanphere and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lanphere

Setting

Landform: Dunes, longitudinal dunes
Landform position (two-dimensional): Summit, backslope, shoulder
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Mixed eolian sands

Typical profile

Oi - 0 to 4 inches: slightly decomposed plant material
A - 4 to 11 inches: sand
AC - 11 to 26 inches: sand
C - 26 to 63 inches: sand

Properties and qualities

Slope: 5 to 75 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F004BX116CA - Sitka spruce-shore pine/California huckleberry, foredunes, mixed eolian sands, sand
Hydric soil rating: No

Minor Components

Clambeach

Percent of map unit: 10 percent
Landform: Deflation basins
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Samoa

Percent of map unit: 5 percent
Landform: Dunes
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

1009—Hydraquents-Wassents mucky silt loam, strongly saline, 0-3 percent slopes, very frequently flooded

Map Unit Setting

National map unit symbol: 2t150
Elevation: 0 to 10 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Hydraquents, low tidal, and similar soils: 50 percent
Wassents and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hydraquents, Low Tidal

Setting

Landform: Tidal flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mucky, silty, and clayey estuarine deposits

Typical profile

Czg1 - 0 to 9 inches: mucky silty clay loam
Cg2 - 9 to 16 inches: mucky silty clay loam
Cg3 - 16 to 26 inches: mucky silty clay loam

Cg4 - 26 to 39 inches: mucky silty clay loam
Cg5 - 39 to 59 inches: mucky silty clay loam

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: 0 inches to salic; 20 to 79 inches to sulfuric
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very frequent
Frequency of ponding: None
Maximum salinity: Strongly saline (30.0 to 80.0 mmhos/cm)
Sodium adsorption ratio, maximum: 75.0
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Ecological site: R004BA205CA - Marshlands
Hydric soil rating: Yes

Description of Wassents

Setting
Landform: Tidal flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mucky, silty, and clayey estuarine deposits

Typical profile
Asez - 0 to 6 inches: mucky silt loam
Cg1 - 6 to 14 inches: mucky silty clay loam
Cg2 - 14 to 31 inches: mucky silty clay loam
Cg3 - 31 to 59 inches: mucky silty clay loam

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: 0 inches to salic; 0 inches to sulfuric
Drainage class: Subaqueous
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very frequent
Frequency of ponding: Frequent
Maximum salinity: Strongly saline (30.0 to 80.0 mmhos/cm)
Sodium adsorption ratio, maximum: 75.0
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Ecological site: R004BA205CA - Marshlands
Hydric soil rating: Yes

Minor Components

Hydraquents, high tidal

Percent of map unit: 5 percent
Landform: Tidal marshes
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Water, marine

Percent of map unit: 5 percent
Landform: Channels

1014—Urban land-Anthraltic Xerorthents association, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2w91f
Elevation: 0 to 10 feet
Mean annual precipitation: 41 to 43 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Urban land, industrial: 80 percent
Anthraltic xerorthents and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land, Industrial

Setting

Landform: Fluviomarine terraces

Properties and qualities

Slope: 0 to 2 percent
Depth to water table: About 24 inches
Frequency of ponding: Frequent

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Anthraltic Xerorthents

Setting

Landform: Fluviomarine terraces

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy fluviomarine deposits and/or coarse-loamy dredge spoils

Typical profile

A - 0 to 6 inches: gravelly loamy fine sand
^C1 - 6 to 13 inches: sandy loam
^C2 - 13 to 19 inches: sandy loam
^C3 - 19 to 24 inches: sandy loam
^C4 - 24 to 31 inches: sandy loam
^C5 - 31 to 43 inches: gravelly sand
C6 - 43 to 65 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A/D
Hydric soil rating: No

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Appendix F

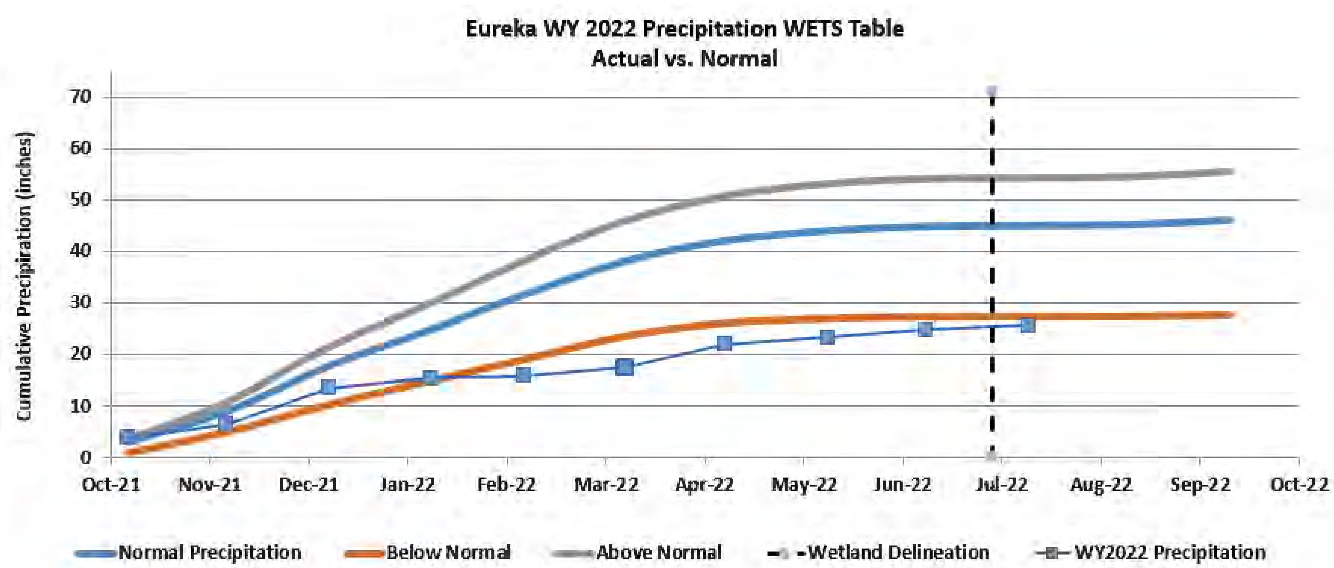
Record of Climatological Observations and WETS Table

McKinleyville WETS Table

Name ARCATA EUREKA AIRPORT, CA US — Loc. (Lat/Lon): 40.97806°, -124.10861°

	Monthly Precipitation (All values in inches)				Cumulative Precipitation (All values in inches)			
Month	Normal[1]	Below Normal[1]	Above Normal[1]	Actual WY 2022[2]	Normal[1]	Below Normal[1]	Above Normal[1]	Actual WY 2022[2]
31-Oct	2.99	1.09	3.60	3.88	2.99	1.09	3.60	3.88
30-Nov	5.96	3.94	7.15	2.62	8.95	5.03	10.75	6.50
31-Dec	8.86	5.28	10.75	7.04	17.81	10.31	21.50	13.54
31-Jan	7.11	4.65	8.54	1.90	24.92	14.96	30.04	15.44
28-Feb	6.75	4.00	8.20	0.51	31.67	18.96	38.24	15.95
31-Mar	6.58	4.58	7.82	1.49	38.25	23.54	46.06	17.44
30-Apr	3.92	2.47	4.73	4.57	42.17	26.01	50.79	22.01
31-May	1.94	0.88	2.36	1.36	44.11	26.89	53.15	23.37
30-Jun	0.87	0.29	1.00	1.53	44.98	27.18	54.15	24.90
31-Jul	0.16	0.04	0.16	0.76	45.14	27.22	54.31	25.66
31-Aug	0.20	0.06	0.23		45.34	27.28	54.54	
30-Sep	0.91	0.27	1.02		46.25	27.55	55.56	

1. From WETS Tables - ARCATA EUREKA AIRPORT, CA US - http://agacis.rcc-acis.org/
2. From NOAA Gage Data - ARCATA EUREKA AIRPORT, CA US - https://www.ncdc.noaa.gov/cdo-web/search



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Appendix D

Botanical and Sensitive Natural Community Assessment Memorandum

Technical Memorandum

12 September 2022

To	The Manila Community Services District	**Tel**	
Copy to	Brett Vivyan, GHD	**Email**	Jane.Cipra@ghd.com, Andrea.Hilton@ghd.com
From	Jane Cipra, GHD Botanist	**Ref. No.**	12572691
Subject	Manila Drainage Project – Botanical and Sensitive Natural Community Assessment Memorandum		

1. Introduction/Purpose

The Manila Community Services District (Manila CSD) proposes to make drainage improvements throughout the community of Manila, California (**Appendix A, Figures 1 and 2**). The Project will apply a community-wide approach to address persistent flooding and drainage problems caused by undersized, disconnected, and failing infrastructure. Simple solutions, consisting of vegetated bioswales, rain gardens, replacement of undersized and failing culverts, and new culverts in select locations are proposed. The Project, led by the Manila CSD, will incorporate multi-objective, multi-benefit project components that address flood reduction, ecosystem services, and resiliency to sea level rise and climate change. Bioswales will be graded and planted with native species along existing and new drainage paths. Existing undersized and or failing culverts will be replaced with new, larger capacity culverts ranging from 12 to 36 inches in diameter. New culverts will be installed in select locations, ranging from 18 to 24 inches in diameter. Rain gardens will be implemented along roadsides as well at the Manila Community Center to replace a concrete courtyard.

To assist with preparation of the Project's California Environmental Quality Act (CEQA) document and required environmental permits, GHD evaluated the potential for rare plants (federally- or state-listed or state special status plant species), Sensitive Natural Communities (SNCs), and Environmentally Sensitive Habitat Areas (ESHA) to occur within the Project's Study Boundary (PSB); (**Appendix A, Figure 2**). In addition, potential Project impacts to these resources (if any), were evaluated. Common species or resources without special protections are not considered. Potential impacts to special status wildlife and wetlands are evaluated in separate reports. The purpose of this technical memorandum is to document the results of the May 3-4 and July 26, 2022 seasonally appropriate floristic surveys. Rare plants observed in the protocol level survey are shown in **Appendix A, Figure 3**.

2. Survey Methods

2.1 Database Searches (CNDDB, CNPS, and IPaC)

Database searches for special status plant records in the Project vicinity (seven-quad search area) were conducted by GHD on March 21, 2022. The seven-quad search area was centered on the Project Study Boundary (PSB) U.S. Geological Survey 7.5-minute quadrangle (Eureka) and the surrounding six quadrangles (Tyee City, Arcata North, Arcata South, McWhinney Creek, Field's Landing, Cannibal Island). Database searches included:

- The California Natural Diversity Database (CNDDB; wildlife records were excluded; CDFW 2022a, **Appendix B**).
- The California Native Plant Society Rare Plant Inventory
- A resources list was obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC; USFWS 2022) for the PSB on June 6, 2022.

2.2 Field Surveys

GHD botanists Jane Cipra and Christian Hernandez conducted spring and summer floristic surveys for special status plants according to *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* by the California Natural Resources Agency, Department of Fish and Wildlife (CDFW 2018) and *General Rare Plant Survey Guidelines* by the *Endangered Species Recovery Program* (USFWS 2002). The special status plant survey was conducted by walking the PSB and identifying all plant species encountered to the lowest taxonomic level necessary for rare plant identification. Nomenclature follows *The Jepson Manual* (Baldwin et al. 2012).

GHD Botanist Jane Cipra has an M.A. in Biology from Humboldt State University, with over fifteen years of experience conducting special status plant surveys. GHD Botanist Christian Hernandez has a degree in Plant Ecology from Humboldt State University and two years of experience conducting biological and botanical surveys.

Jane Cipra and Christian Hernandez conducted seasonally appropriate botanical surveys on May 3rd and 4th and July 26th, 2022. During the spring survey, the weather was overcast to sunny and approximately 60 degrees Fahrenheit. During the summer survey the weather was sunny and approximately 65 degrees Fahrenheit. A list of species observed within the PSB is provided in **Appendix C**.

The total spring survey effort was 32 person-hours, and the total summer survey effort was 12 person-hours. The summer survey did not cover as much area as the as spring survey, as the PSB reduced between the two surveys. All potentially suitable habitat for rare species was resurveyed during the July 2022 survey. Habitats and special status plants were photo-documented onsite (**Appendix D**). Special status plants were mapped using points and polygons collected in the field with an Eos Arrow 100 Submeter Global Positioning System (GPS) Receiver with Global Navigation Satellite System (GNSS) and an iPad running ArcGIS Collector software in the WGS84 datum.

1.1.1 Sensitive Natural Communities and Environmentally Sensitive Habitat Areas

Vegetation communities onsite were evaluated for potential inclusion as Sensitive Natural Communities (SNCs) and Environmentally Sensitive Habitat Areas (ESHA). All potential SNCs and ESHA in the PSB are also within one-parameter or three-parameter wetlands and were there not evaluated further. Aside from one-parameter and three-parameter SNCs, no additional SNCs were observed.

3. Results

3.1 Summary of General Biological Resources

During the protocol level botanical survey, 194 species of vascular plants were observed in the PSB. Of all plants observed, 74 species were native to the local area and 120 were non-native species, equalling 61% non-native species.

Based on occurrence records, field surveys, site visits, and habitat availability, four special status plant species have a high potential to occur in the PSB, and one California Native Plant Society (CNPS) ranked plant is present in the PSB: Lyngbye's sedge (*Carex lyngbyei*) ranked as 2B.2 (2B = Plants rare, threatened, or endangered in California, but more common elsewhere; .2 = Moderately threatened in California.) Field surveys also yielded the observation and delineation of wetlands within the PSB. See the separate Aquatic Resources Delineation Report for further information about these wetlands.

3.2 Special Status Plants

Table 1 summarizes the potential for special status plants documented in the surrounding 7-quad area to occur within the PSB. See the Species Descriptions section for a discussion of special status plants observed on-site as well as those with a High or Moderate Potential to occur.

Table 1 *Potential for Special Status Plants to Occur in the PSB*

Scientific Name	Common Name	Status, CRPR[2]	Global Rank[2]	State Rank[2]	Habitat Requirements[1]	Potential to Occur in the PSB
Abronia umbellata var. *breviflora*	pink sand-verbena	1B.1	G4G5 T2	S2	Coastal dunes	**Low potential.** Marginally suitable habitat is present.
Angelica lucida	sea-watch	4.2	G5	S3	Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps	**Low potential.** Marginally suitable habitat is present.
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	1B.2	G2T2	S2	Coastal dunes, Coastal scrub, Marshes and swamps	**Low potential.** This plant has not been observed on the Samoa peninsula since 1925.
Carex leptalea	bristle-stalked sedge	2B.2	G5	S1	Bogs and fens, Marshes and swamps, Meadows and seeps	**Low potential.** The nearest non-historic occurrence (from 2011) is 15.5 miles north of the PSB.
Carex lyngbyei	Lyngbye's sedge	2B.2	G5	S3	Marshes and swamps	**Present.** This species was observed in two areas within the PSB.
Carex praticola	northern meadow sedge	2B.2	G5	S2	Meadows and seeps	**Low potential.** This species has not been observed in the Humboldt Bay Area since 1915.
Castilleja ambigua var. *humboldtiensis*	Humboldt Bay owl's-clover	1B.2	G4T2	S2	Marshes and swamps	**High potential.** The southern-most portion of the PSB is located within a CNDDB occurrence of this species (from 1978). Suitable habitat is present in the eastern edges of the PSB.
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	1B.2	G4?T2	S2	Marshes and swamps	**High potential.** The eastern end of the PSB near Mill street is located within a CNDDB occurrence of this species (from 1987). Suitable habitat is present in the eastern edges of the PSB.
Chrysosplenium glechomifolium	Pacific golden saxifrage	4.3	G5?	S3	North Coast coniferous forest, Riparian forest	**No potential.** The PSB is outside of the elevational range for this species (35-720 ft).
Collinsia corymbosa	round-headed Chinese-houses	1B.2	G1	S1	Coastal dunes	**No potential.** There are no confirmed observations of this species in the Humboldt Bay Area.
Eleocharis parvula	small spikerush	4.3	G5	S3	Marshes and swamps	**Low potential.** Suitable habitat is present but this species is not known to occur in the Manila area.
Erysimum menziesii	Menzies' wallflower	FE, SE, 1B.1	G1	S1	Coastal dunes	**Low potential.** Very marginal habitat is present in the PSB.

Scientific Name	Common Name	Status, CRPR[2]	Global Rank[2]	State Rank[2]	Habitat Requirements[1]	Potential to Occur in the PSB
Erythronium revolutum	coast fawn lily	2B.2	G4G5	S3	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	**Low potential.** The nearest occurrence (from 2018) is 9.5 miles southeast of the PSB.
Fissidens pauperculus	minute pocket moss	1B.2	G3?	S2	North Coast coniferous forest	**No potential.** The PSB is outside of the elevational range for this species (35-3,360 ft).
Gilia capitata ssp. *pacifica*	Pacific gilia	1B.2	G5T3	S2	Chaparral, Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	**Low potential.** This species has not been observed in the Humboldt Bay Area since 1905.
Gilia millefoliata	dark-eyed gilia	1B.2	G2	S2	Coastal dunes	**Low potential.** Very marginal habitat is present in the PSB.
Glehnia littoralis ssp. *leiocarpa*	American glehnia	4.2	G5T5	S2S3	Coastal dunes	**Low potential.** Very marginal habitat is present in the PSB.
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	1B.2	G4T3	S3	Coastal bluff scrub, Coastal dunes, Coastal prairie	**Low potential.** The nearest confirmed occurrence (from 2018) is 4.3 miles southwest of the PSB. Very marginal habitat is present in the PSB.
Hosackia gracilis	harlequin lotus	4.2	G3G4	S3	Broadleafed upland forest, Cismontane woodland, Closed-cone/North Coast coniferous forest, Coastal bluff scrub.prairie/scrub, Marshes, swamps, meadows, and seeps, grassland	**Low potential.** This species is not mapped in CNDDB. Marginally suitable habitat is present.
Lasthenia californica ssp. *macrantha*	perennial goldfields	1B.2	G3T2	S2	Coastal bluff scrub, Coastal dunes, Coastal scrub	**No potential.** There are no confirmed observations of this species in the Humboldt Bay Area.
Lathyrus japonicus	seaside pea	2B.1	G5	S2	Coastal dunes	**Low potential.** This species has not been observed in the Humboldt Bay Area since 1925.
Lathyrus palustris	marsh pea	2B.2	G5	S2	Bogs and fens, Coastal prairie/scrub, Lower montane/North Coast coniferous forest, Marshes and swamps	**Low potential.** The only known occurrence of this species in the Humboldt Bay Area is an observation (from 2003) in the Samoa area.
Layia carnosa	beach layia	FT, SE, 1B.1	G2	S2	Coastal dunes, Coastal scrub	**Low potential.** Marginally suitable habitat is present in the PSB.
Lilium kelloggii	Kellogg's lily	4.3	G3	S3	Lower montane coniferous forest, North Coast coniferous forest	**No potential.** No suitable habitat is present in the PSB.
Lilium occidentale	western lily	FE, SE, 1B.1	G1	S1	Bogs and fens, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, North Coast coniferous forest	**No potential**. This conspicuous species is not known to occur on the Samoa peninsula.
Listera cordata	heart-leaved twayblade	4.2	G5	S4	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	**No potential.** No suitable habitat is present in the PSB.

Scientific Name	Common Name	Status, CRPR[2]	Global Rank[2]	State Rank[2]	Habitat Requirements[1]	Potential to Occur in the PSB
Mitellastra caulescens	leafy-stemmed mitrewort	4.2	G5	S4	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	**No potential.** No suitable habitat is present in the PSB.
Monotropa uniflora	ghost-pipe	2B.2	G5	S2	Broadleafed upland forest, North Coast coniferous forest	**No potential.** The PSB is outside of the elevational range for this species (35-1,805 ft).
Montia howellii	Howell's montia	2B.2	G3G4	S2	Meadows and seeps, North Coast coniferous forest, Vernal pools	**Low potential.** The nearest occurrence (from 2019) is 3.5 miles east of the PSB. Marginally suitable habitat is present.
Oenothera wolfii	Wolf's evening-primrose	1B.1	G2	S1	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest	**Low potential.** A CNDDB occurrence (from 2001) is 0.2 mile south of the PSB; however, this occurrence is likely an escaped garden variety (DeWoody 2008).
Pleuropogon refractus	nodding semaphore grass	4.2	G4	S4	Lower montane/North Coast coniferous forest, Meadows and seeps, Riparian forest	**Low potential.** This species is not mapped in CNDDB. Marginally suitable habitat is present.
Puccinellia pumila	dwarf alkali grass	2B.2	G4?	SH	Marshes and swamps	**No potential.** This species was last observed at the mouth of the Eel River in 1938.
Ribes laxiflorum	trailing black currant	4.3	G5?	S3	North Coast coniferous forest	**No potential.** No suitable habitat is present in the PSB.
Sidalcea malachroides	maple-leaved checkerbloom	4.2	G3	S3	Broadleafed upland forest, Coastal prairie/scrub, North Coast coniferous forest, Riparian woodland	**Low potential**. The nearest occurrence of this species (from 1999) is 2.5 miles south of the PSB.
Sidalcea oregana ssp. *eximia*	coast checkerbloom	1B.2	G5T1	S1	Lower montane/North Coast coniferous forest, Meadows and seeps	**Low potential.** The nearest extant occurrence (from 2001) is 7.0 miles northeast of the PSB.
Silene scouleri ssp. *scouleri*	Scouler's catchfly	2B.2	G5T4T5	S2S3	Coastal bluff scrub/prairie, Valley and foothill grassland	**Low potential.** This species is not mapped in CNDDB. Marginally suitable habitat is present in the PSB.
Spergularia canadensis var. *occidentalis*	western sand-spurrey	2B.1	G5T4	S1	Marshes and swamps	**High potential.** There are two uncertain observations in CNDDB located 1.2 miles southwest of the PSB. Suitable habitat is present in the PSB.
Sulcaria spiralifera	twisted horsehair lichen	1B.2	G3G4	S2	Coastal dunes, North Coast coniferous forest	**Low potential.** Marginally suitable habitat is present in the PSB.
Viola palustris	alpine marsh violet	2B.2	G5	S1S2	Bogs and fens, Coastal scrub	**Low potential.** This species has not been observed in the Humboldt Bay Area since 1923.

Footnotes:
1 General habitat, and microhabitat column information, reprinted from CNDDB (March 2022).
2 Rankings from CNDDB (October 2021).

Status Abbreviations:
FE Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; FD = Federally Delisted
SE State Endangered; SD = State Delisted; ST = State Threatened.

CRPR: CNPS rankings for rare plants (CNPS 2022) - 1A = Plants presumed extinct in California; 1B = Plants rare, threatened or endangered in California and elsewhere; 2B = Plants rare, threatened, or endangered in California, but more common elsewhere; 3 = Plants about which more information is needed (a review list); 4 = Plants of limited distribution (a watch list); n/a = not applicable; Threat Code extensions and their meanings: ".1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat); .3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)" (CDFW 2022b).

GRank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2022 (ranking according to degree of global imperilment - G1 = Critically Imperilled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperilled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. Subspecies/variety level: "Subspecies/varieties receive a T-rank attached to the G-rank. With the subspecies/varieties, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety" (CDFW 2022b); ? = " Denotes inexact numeric rank" (NatureServe 2022; Q = " Questionable taxonomy that may reduce conservation priority" (NatureServe 2022)

SRank: State Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of imperilment in the state (California) - S1 = Critically Imperilled—Critically imperilled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperilled—Imperilled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state; S4 = Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors; S5 = Secure—Common, widespread, and abundant in the state; SNR = State Not Ranked.

Potential to Occur:

No potential: Habitat in and adjacent to the PSB is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Low potential: 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 in the PSB.

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 in the PSB.

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 in the PSB

Present: Detected or documented on-site.

3.2.1 Species Descriptions

Species described below have a high potential to occur within the PSB (**Table 1**). No species were determined to have moderate potential. All rare plant species that are present or have a high probability of occurring in the PSB are salt marsh species that are found along the shore of Humboldt Bay. No rare plants were expected or observed in the upland or freshwater habitats of in the PSB.

Humboldt Bay owl's-clover (*Castilleja ambigua* var. *humboldtiensis*) CRPR 1B.2

Humboldt Bay owl's-clover has no state or federal listing status but is ranked 1B.2 on the CRPR list, as it is threatened by coastal development and non-native plants (CNPS 2022). This annual hemiparasitic herb that blooms April through August is found in coastal salt marshes and swamps between 0 and 10 feet in elevation. A small population of approximately 1,000 plants was observed approximately 50 feet outside of the PSB on the shore of Humboldt Bay between Mill Street and Manila Avenue (**Appendix A, Figure 3**). There is also a historic CNDDB occurrence (from 1978) overlapping the southern-most portions of the PSB. This species was not observed within the PSB.

Lyngbye's sedge (*Carex lyngbyei*) CRPR 2B.2

Lyngbye's sedge has no state or federal listing status but is ranked 2B.2 on the CRPR list, as it is threatened by grazing, non-native plants, and habitat disturbance (CNPS 2022). This perennial rhizomatous herb that blooms April through August is found in marshes and on the banks of tidal sloughs between 0 and 35 feet in elevation. A dense stand of approximately 320 square feet was observed inside the PSB on the shore of Humboldt Bay between Mill Street and Manila Avenue, and another stand of approximately 180 square feet was observed within the PSB on the shore of Humboldt Bay off of Victor Boulevard (**Appendix A, Figure 3**). Both stands extended outside of the PSB totalling approximately 1,820 square feet.

Point Reyes salty bird's-beak (*Chloropyron maritimum* ssp. *palustre*) 1B.2

Point Reyes salty bird's-beak has no state or federal listing status but is ranked 1B.2 on the CRPR list, as it is threatened by development, foot traffic, non-native plants, hydrological alterations, and cattle grazing (CNPS 2022). This annual hemiparasitic herb that blooms June through October is found in coastal salt marshes and swamps between 0 and 10 feet in elevation. There is a historic CNDDB occurrence (from 1987) overlapping the eastern-most portion of the PSB near Mill Street. This CNDDB occurrence was confirmed within 10 feet of the PSB on July 26, 2022, but this species was not observed within the PSB (**Appendix A, Figure 3**).

Western sand-spurrey (*Spergularia canadensis* var. *occidentalis*) 2B.1

Western sand spurrey has no state or federal listing status but is ranked 2B.1 on the CRPR list, as it is threatened by coastal development (CNPS 2022). This annual herb that blooms June through August is found in coastal salt marshes and swamps between 0 and 10 feet in elevation. There is a CNDDB occurrence from an unknown date attributed to a vague location in the area of Samoa, California, approximately 1.5 miles southwest of the PSB. This species was not observed in the PSB or nearby.

3.3 Critical Habitat

The PSB does not overlap any United States Fish and Wildlife Service (USFWS)-designated critical habitat.

3.4 SNCs and ESHA

The PSB contains several vegetation communities which are considered SNCs and may also be considered ESHA (Table 2). However, all SNCs and potential ESHA present are also considered one- or three-parameter wetlands in the Coastal Zone and so were not further evaluated or mapped for mitigation purposes. SNCs present are briefly summarized below. No upland SNCs or ESHA were identified in the PSB.

Table 2 Sensitive Natural Communities present in the PSB

Habitat Type	Global Rank[1]	State Rank[1]	Characteristic species[1]
Lyngbye's sedge swathes	GNR	S1	*Carex lyngbyei*
Pickleweed mats	G4	S3	*Sarcocornia pacifica (Salicornia depressa)*
Hardstem and California bulrush marshes	G4	S3	*Schoenoplectus californicus*
Coastal dune willow thickets	G4	S3	*Salix hookeriana* is dominant in the low tree canopy with *Baccharis pilularis, Morella californica, Rubus* spp., and *Salix lasiolepis*
Salmonberry – Wax myrtle scrub	G5	S3	*Morella californica* is dominant in the shrub canopy with *Rubus ursinus* in the understory. No *Rubus spectabilis* is present in the PSB.
Salal-berry brambles: *Rubus ursinus* association		Sensitive	*R. ursinus* dominant in the shrub canopy

Footnotes:

[1] Characteristic species and rankings from A Manual of California Vegetation (Sawyer et al. 2009).

Column Header Categories and Abbreviations:

GRank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2021 (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. (NatureServe 2022)

State Rank: State Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of imperilment in the state (California) – S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

4. Potential Impacts to Special Status Plants and SNCs and Proposed Avoidance and Minimization Measures

4.1.1 Special Status Plants

Lyngbye's sedge is present in the PSB and Humboldt Bay owl's-clover and Point Reyes salty bird's-beak are within 10 feet of the PSB. To protect these special status plants, the following measure is recommended for inclusion into environmental documentation to reduce potential impacts.

Measure BIO-1: Protect Special Status Plants

Avoidance and minimization measures for special status plant species are addressed collectively for all species. The following measures are recommended:

- The locations of any special status plant populations mapped herein shall be clearly identified in the contract documents (plans and specifications).
- If special status plant populations are detected where construction would have unavoidable impacts, seed will be collected prior to construction and redistributed following construction during the appropriate season. On-site seed collection from the impacted species will be prioritized. If on-site seed collection is infeasible due to blooming period conflicts with the planned construction season, off-site seed collection will occur from a suitable nearby area.

5. Conclusion

Based on occurrence records and habitat availability, four special status plants have a high probability of occurring in the PSB. One special status species was observed in the PSB: Lyngbye's sedge. Two additional special status species were observed immediately outside the PSB: Humboldt Bay owl's-clover and Point Reyes salty bird's-beak. With implementation of the proposed avoidance and minimization measures (specifically, Measure BIO-1), impacts will be avoided or reduced.

All potential SNCs and ESHA in the PSB are also within one- or three-parameter wetlands and were mapped and classified as wetlands. Please see the separate Aquatic Resources Delineation for more information on these wetlands.

6. Literature Cited

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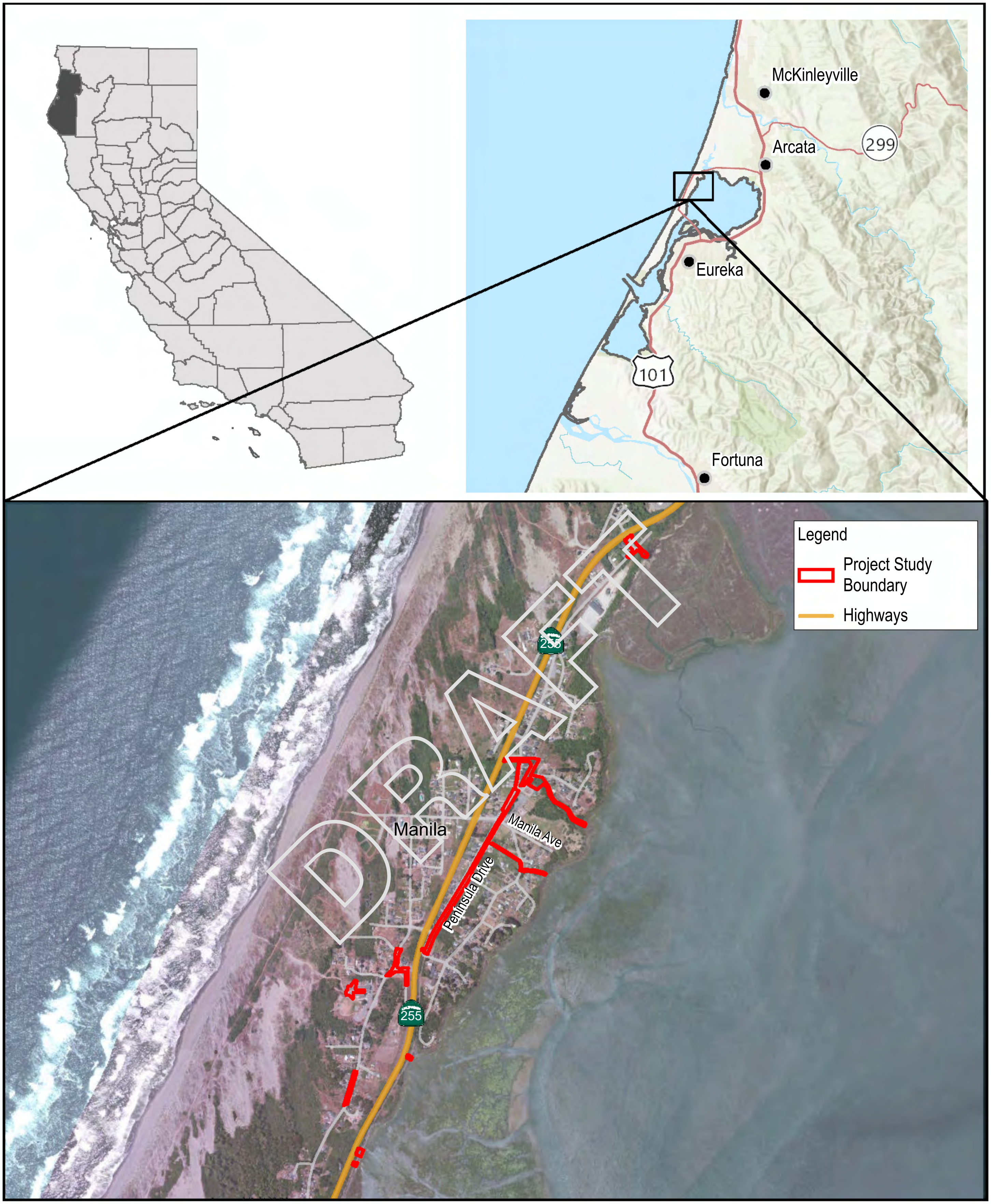
Appendices

Appendix A

Figures



Paper Size ANSI A

0 500 1,000 1,500

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No. **12572691**
Revision No. **-**
Date **Aug 2022**

Vicinity Map

FIGURE 1

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Data source: World Imagery (Clarity): This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseExport: This layer is not intended to be used to export tiles for offline. Data Collection and Editing: This layer may be used in various ArcGIS apps to support data collection and editing, with the results used internally or shared with others, as described for these use cases.; World Topographic Map - labelless: California State Parks, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS; transportation: USGS The National Map: National Transportation Dataset; U.S. Census Bureau – TIGER/Line; U.S. Forest Service. Data Refreshed July, 2022.; World Hillshade: Esri, CGIAR, USGS. Created by: jlopez4

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project Study Boundary

Project No. **1257269**
Revision No. **-**
Date **Aug 2022**

FIGURE 2

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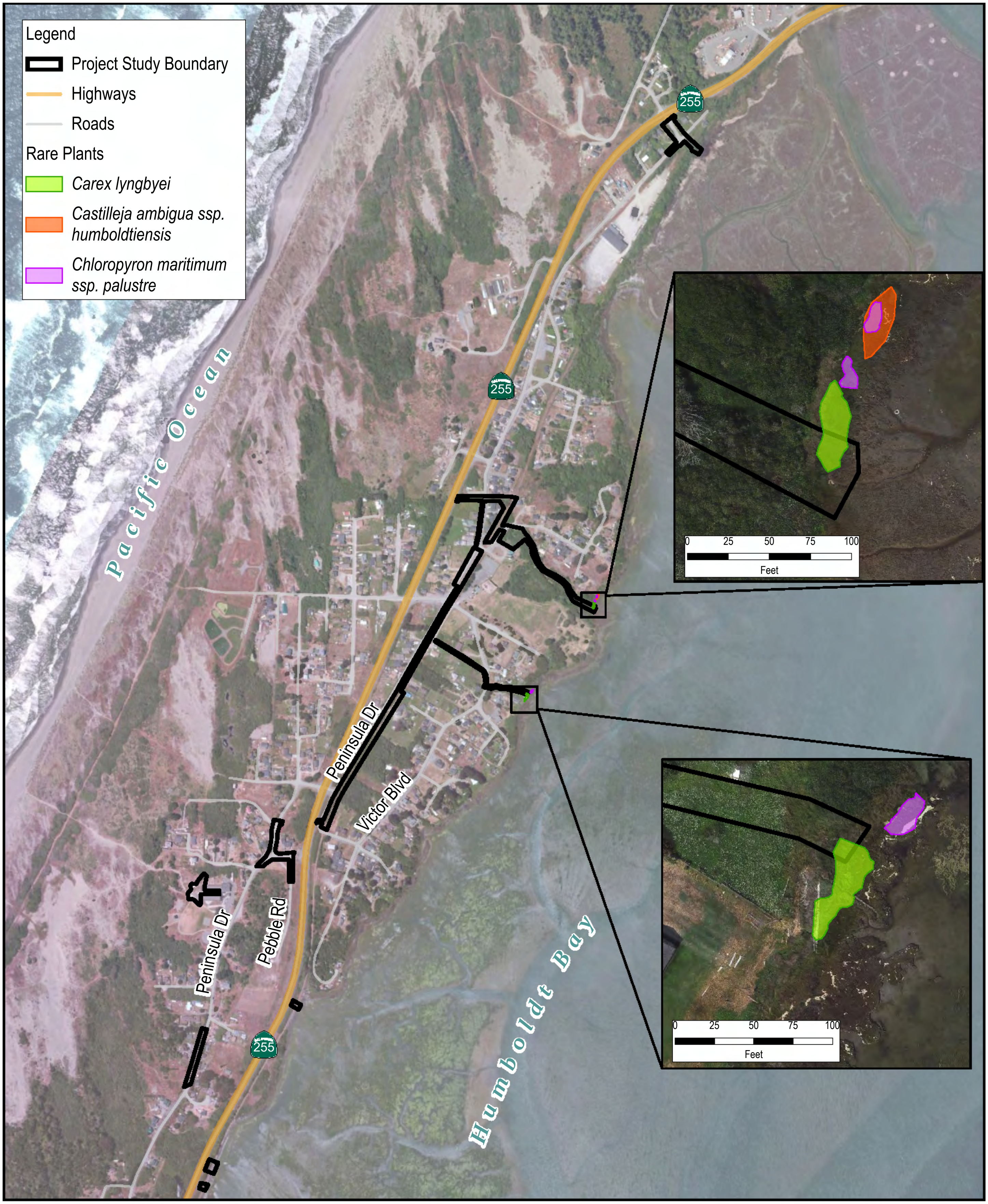
Print date: 12 Aug 2022 - 15:50

Data source: World Imagery (Clarity): This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseExport: This layer is not intended to be used to export tiles for offline. Data Collection and Editing: This layer may be used in various ArcGIS apps to support data collection and editing, with the results used internally or shared with others, as described for these use cases.. Created by: jlopez4



Paper Size ANSI A

0 250 500 750 1,000

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No. **1257269**
Revision No. **-**
Date **Aug 2022**

Rare Plants

FIGURE 3

\\ghdnet\ghd\US\Eureka\Projects\561\12572691\GIS\Maps\Deliverables\12572691_Botanical\12572691_Botanical_memo.aprx , 12572691_003_Rare Plants
Print date: 18 Aug 2022 - 10:49

Data source: World Imagery (Clarity): This work is licensed under the Esri Master License Agreement.View Summary | View Terms of UseExport: This layer is not intended to be used to export tiles for offline. Data Collection and Editing: This layer may be used in various ArcGIS apps to support data collection and editing, with the results used internally or shared with others, as described for these use cases.
AirPhoto_2019_MapService: . Created by: jlopez4

Appendix B

Database Searches (CNDDB, CNPS, IPaC)

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Eureka (4012472) OR Arcata North (4012481) OR Arcata South (4012471) OR Tyee City (4012482) OR McWhinney Creek (4012461) OR Fields Landing (4012462) OR Cannibal Island (4012463))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Abronia umbellata var. breviflora pink sand-verbena	G4G5T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	5 236	61 S:16	0	9	2	1	1	3	7	9	15	1	0
Accipiter striatus sharp-shinned hawk	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	200 580	22 S:2	0	0	2	0	0	0	0	2	2	0	0
Acipenser medirostris pop. 1 green sturgeon - southern DPS	G2T1 S1	Threatened None	AFS_VU-Vulnerable IUCN_NT-Near Threatened	0 0	14 S:1	0	1	0	0	0	0	0	1	1	0	0
Anodonta californiensis California floater	G3Q S2?	None None	USFS_S-Sensitive	41 41	6 S:1	0	0	0	0	0	1	1	0	1	0	0
Aplodontia rufa humboldtiana Humboldt mountain beaver	G5TNR SNR	None None		50 1,700	28 S:16	0	0	0	0	0	16	14	2	16	0	0
Arborimus albipes white-footed vole	G3G4 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	15 15	3 S:1	0	0	0	0	0	1	1	0	1	0	0
Arborimus pomo Sonoma tree vole	G3 S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	40 1,600	222 S:7	0	0	0	0	0	7	7	0	7	0	0
Ardea alba great egret	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	4 194	43 S:6	1	0	0	0	0	5	4	2	6	0	0
Ardea herodias great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	4 450	156 S:13	6	0	0	0	0	7	7	6	13	0	0
Ascaphus truei Pacific tailed frog	G4 S3S4	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	100 1,027	491 S:8	0	0	0	0	0	8	5	3	8	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Astragalus pycnostachyus var. pycnostachyus coastal marsh milk-vetch	G2T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley		24 S:1	0	0	0	0	0	1	1	0	1	0	0
Bombus caliginosus obscure bumble bee	G2G3 S1S2	None None	IUCN_VU-Vulnerable	0 2,100	181 S:8	0	0	0	0	0	8	8	0	8	0	0
Bombus crotchii Crotch bumble bee	G2 S1S2	None None		10 10	437 S:1	0	0	0	0	0	1	1	0	1	0	0
Bombus occidentalis western bumble bee	G2G3 S1	None None	USFS_S-Sensitive	10 2,100	306 S:9	0	0	0	0	0	9	9	0	9	0	0
Brachyramphus marmoratus marbled murrelet	G3 S2	Threatened Endangered	CDF_S-Sensitive IUCN_EN-Endangered NABCI_RWL-Red Watch List	1,200 1,800	110 S:4	0	2	0	0	0	2	4	0	4	0	0
Cardamine angulata seaside bittercress	G4G5 S3	None None	Rare Plant Rank - 2B.1	310 310	38 S:1	0	0	0	0	0	1	1	0	1	0	0
Carex arcta northern clustered sedge	G5 S1	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	200 500	13 S:2	0	0	0	0	0	2	2	0	2	0	0
Carex leptalea bristle-stalked sedge	G5 S1	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	300 300	8 S:1	0	0	0	0	0	1	1	0	1	0	0
Carex lyngbyei Lyngbye's sedge	G5 S3	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	0 20	37 S:22	2	3	9	0	0	8	7	15	22	0	0
Carex praticola northern meadow sedge	G5 S2	None None	Rare Plant Rank - 2B.2		14 S:1	0	0	0	0	0	1	1	0	1	0	0
Castilleja ambigua var. humboldtiensis Humboldt Bay owl's-clover	G4T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	5 65	31 S:21	2	8	2	0	0	9	10	11	21	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Castilleja litoralis Oregon coast paintbrush	G3 S3	None None	Rare Plant Rank - 2B.2	50 500	44 S:3	0	0	0	0	0	3	2	1	3	0	0
Charadrius montanus mountain plover	G3 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	4 7	90 S:2	0	0	0	0	0	2	0	2	2	0	0
Charadrius nivosus nivosus western snowy plover	G3T3 S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List	10 23	138 S:5	0	1	0	0	0	4	3	2	5	0	0
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	G4?T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	5 10	80 S:17	2	6	1	1	0	7	10	7	17	0	0
Cicindela hirticollis gravida sandy beach tiger beetle	G5T2 S2	None None		10 10	34 S:1	0	0	0	0	1	0	1	0	0	0	1
Circus hudsonius northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	6 6	54 S:1	0	0	1	0	0	0	0	1	1	0	0
Coastal Terrace Prairie Coastal Terrace Prairie	G2 S2.1	None None		160 160	8 S:1	0	1	0	0	0	0	1	0	1	0	0
Collinsia corymbosa round-headed Chinese-houses	G1 S1	None None	Rare Plant Rank - 1B.2		13 S:1	0	0	0	0	0	1	1	0	1	0	0
Corynorhinus townsendii Townsend's big-eared bat	G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	30 250	635 S:3	0	0	0	0	0	3	3	0	3	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Coturnicops noveboracensis yellow rail	G4 S1S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	4 24	45 S:4	0	0	0	0	0	4	3	1	4	0	0
Egretta thula snowy egret	G5 S4	None None	IUCN_LC-Least Concern	4 47	20 S:3	1	0	0	0	0	2	1	2	3	0	0
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	23 60	184 S:3	0	1	0	0	0	2	0	3	3	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	3 400	1404 S:9	1	3	1	0	0	4	2	7	9	0	0
Entosphenus tridentatus Pacific lamprey	G4 S3	None None	AFS_VU-Vulnerable BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	14 43	9 S:5	0	0	0	0	0	5	1	4	5	0	0
Erethizon dorsatum North American porcupine	G5 S3	None None	IUCN_LC-Least Concern	13 817	523 S:9	0	0	0	0	0	9	4	5	9	0	0
Erysimum menziesii Menzies' wallflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	5 30	19 S:6	2	2	1	1	0	0	0	6	6	0	0
Erythronium revolutum coast fawn lily	G4G5 S3	None None	Rare Plant Rank - 2B.2		172 S:1	0	0	0	0	0	1	1	0	1	0	0
Eucyclogobius newberryi tidewater goby	G3 S3	Endangered None	AFS_EN-Endangered IUCN_VU-Vulnerable	0 12	127 S:10	1	1	0	1	0	7	1	9	10	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Falco peregrinus anatum American peregrine falcon	G4T4 S3S4	Delisted Delisted	CDF_S-Sensitive CDFW_FP-Fully Protected	40 902	73 S:8	0	5	0	0	0	3	1	7	8	0	0
Fissidens pauperculus minute pocket moss	G3? S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	100 650	22 S:3	0	0	0	0	0	3	3	0	3	0	0
Gilia capitata ssp. pacifica Pacific gilia	G5T3 S2	None None	Rare Plant Rank - 1B.2	250 250	91 S:1	0	0	0	0	0	1	1	0	1	0	0
Gilia millefoliata dark-eyed gilia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	5 50	54 S:11	1	4	1	0	0	5	6	5	11	0	0
Haliaeetus leucocephalus bald eagle	G5 S3	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive	29 580	332 S:3	1	1	0	0	0	1	0	3	3	0	0
Hesperevax sparsiflora var. brevifolia short-leaved evax	G4T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	10 15	72 S:6	0	1	1	0	0	4	2	4	6	0	0
Lampetra richardsoni western brook lamprey	G4G5 S3S4	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	35 350	4 S:4	0	0	0	0	0	4	1	3	4	0	0
Lasthenia californica ssp. macrantha perennial goldfields	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		59 S:1	0	0	0	0	0	1	1	0	1	0	0
Lathyrus japonicus seaside pea	G5 S2	None None	Rare Plant Rank - 2B.1 IUCN_LC-Least Concern	5 200	24 S:3	0	0	0	0	0	3	3	0	3	0	0
Lathyrus palustris marsh pea	G5 S2	None None	Rare Plant Rank - 2B.2	10 10	13 S:2	0	0	0	0	0	2	1	1	2	0	0
Layia carnosa beach layia	G2 S2	Threatened Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	10 40	25 S:6	0	3	1	0	0	2	1	5	6	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Lilium occidentale western lily	G1G2 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank	30 350	16 S:9	0	3	1	1	3	1	3	6	6	3	0
Lycopodium clavatum running-pine	G5 S3	None None	Rare Plant Rank - 4.1	160 1,860	120 S:35	2	10	13	3	0	7	34	1	35	0	0
Margaritifera falcata western pearlshell	G4G5 S1S2	None None		75 317	78 S:2	0	0	0	0	0	2	2	0	2	0	0
Martes caurina humboldtensis Humboldt marten	G4G5T1 S1	Threatened Endangered	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	1,100 1,100	44 S:1	0	0	0	0	0	1	1	0	1	0	0
Mitellastra caulescens leafy-stemmed mitrewort	G5 S4	None None	Rare Plant Rank - 4.2	1,200 1,200	21 S:1	0	1	0	0	0	0	1	0	1	0	0
Monotropa uniflora ghost-pipe	G5 S2	None None	Rare Plant Rank - 2B.2	100 100	115 S:1	0	0	0	0	0	1	1	0	1	0	0
Montia howellii Howell's montia	G3G4 S2	None None	Rare Plant Rank - 2B.2	39 1,600	123 S:14	0	5	2	3	3	1	3	11	11	3	0
Myotis evotis long-eared myotis	G5 S3	None None	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_M-Medium Priority	40 429	139 S:2	0	1	0	0	0	1	2	0	2	0	0
Nannopterum auritum double-crested cormorant	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	10 10	39 S:1	0	0	0	0	0	1	1	0	1	0	0
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	G3 S3.2	None None		0 0	53 S:11	1	0	0	0	0	10	11	0	11	0	0
Northern Foredune Grassland Northern Foredune Grassland	G1 S1.1	None None		50 50	1 S:1	0	0	0	0	0	1	1	0	1	0	0
Nycticorax nycticorax black-crowned night heron	G5 S4	None None	IUCN_LC-Least Concern	4 194	37 S:8	1	0	0	0	0	7	6	2	8	0	0
Oenothera wolfii Wolf's evening-primrose	G2 S1	None None	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank	10 25	29 S:2	0	0	0	0	0	2	2	0	2	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Oncorhynchus clarkii clarkii coast cutthroat trout	G5T4 S3	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern USFS_S-Sensitive	5 317	45 S:16	0	0	1	0	0	15	10	6	16	0	0
Oncorhynchus kisutch pop. 2 coho salmon - southern Oregon / northern California ESU	G5T2Q S2	Threatened Threatened	AFS_TH-Threatened	35 117	10 S:6	0	0	2	0	0	4	1	5	6	0	0
Oncorhynchus mykiss irideus pop. 16 steelhead - northern California DPS	G5T2T3Q S2S3	Threatened None	AFS_TH-Threatened	35 117	12 S:4	0	1	1	0	0	2	0	4	4	0	0
Pandion haliaetus osprey	G5 S4	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	10 1,240	504 S:80	14	25	7	2	1	31	72	8	79	1	0
Pekania pennanti Fisher	G5 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	41 555	555 S:5	0	3	0	0	0	2	0	5	5	0	0
Puccinellia pumila dwarf alkali grass	G5 SH	None None	Rare Plant Rank - 2B.2	15 15	2 S:1	0	0	0	0	0	1	1	0	1	0	0
Rallus obsoletus obsoletus California Ridgway's rail	G3T1 S1	Endangered Endangered	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List		99 S:2	0	0	0	0	2	0	2	0	0	0	2
Rana aurora northern red-legged frog	G4 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	4 800	292 S:57	0	4	0	1	0	52	14	43	57	0	0
Rana boylii foothill yellow-legged frog	G3 S3	None Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	7 2,100	2478 S:11	2	1	0	0	0	8	3	8	11	0	0
Rhyacotriton variegatus southern torrent salamander	G3G4 S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	200 1,200	416 S:8	0	0	1	0	0	7	5	3	8	0	0
Riparia riparia bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	50 114	298 S:3	0	1	0	0	0	2	2	1	3	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Scaphinotus behrensi Behrens' snail-eating beetle	G2G4 S2S4	None None		400 400	4 S:1	0	0	0	0	0	1	1	0	1	0	0
Sidalcea malachroides maple-leaved checkerbloom	G3 S3	None None	Rare Plant Rank - 4.2	100 1,650	136 S:26	2	4	7	10	0	3	26	0	26	0	0
Sidalcea malviflora ssp. patula Siskiyou checkerbloom	G5T2 S2	None None	Rare Plant Rank - 1B.2	50 300	60 S:6	0	0	3	0	0	3	3	3	6	0	0
Sidalcea oregana ssp. eximia coast checkerbloom	G5T1 S1	None None	Rare Plant Rank - 1B.2	20 200	19 S:5	0	0	2	0	0	3	4	1	5	0	0
Silene scouleri ssp. scouleri Scouler's catchfly	G5T4T5 S2S3	None None	Rare Plant Rank - 2B.2		23 S:1	0	0	0	0	0	1	1	0	1	0	0
Sitka Spruce Forest Sitka Spruce Forest	G1 S1.1	None None		160 160	4 S:1	0	0	1	0	0	0	1	0	1	0	0
Spergularia canadensis var. occidentalis western sand-spurrey	G5T4 S1	None None	Rare Plant Rank - 2B.1	5 10	4 S:4	0	0	1	0	0	3	3	1	4	0	0
Spirinchus thaleichthys longfin smelt	G5 S1	Candidate Threatened		0 10	46 S:6	0	0	0	0	0	6	5	1	6	0	0
Sulcaria spiralifera twisted horsehair lichen	G3G4 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	30 43	18 S:3	0	0	0	0	0	3	1	2	3	0	0
Thaleichthys pacificus eulachon	G5 S2	Threatened None			10 S:2	0	0	0	0	1	1	2	0	1	1	0
Trichodon cylindricus cylindrical trichodon	G4G5 S2	None None	Rare Plant Rank - 2B.2		14 S:1	0	0	0	0	0	1	1	0	1	0	0
Usnea longissima Methuselah's beard lichen	G4 S4	None None	Rare Plant Rank - 4.2 BLM_S-Sensitive	520 2,100	206 S:16	0	3	1	6	0	6	15	1	16	0	0
Viola palustris alpine marsh violet	G5 S1S2	None None	Rare Plant Rank - 2B.2	100 100	10 S:2	0	0	0	0	0	2	2	0	2	0	0

California Native Plant Society

Search Results

49 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**4012472:4012471:4012481:4012482:4012462:4012463:4012461**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
Abronia umbellata var. breviflora	pink sand-verbena	Nyctaginaceae	annual herb	Jun-Oct	None	None	G4G5T2	S2	1B.1
Angelica lucida	sea-watch	Apiaceae	perennial herb	Apr-Sep	None	None	G5	S3	4.2
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	Fabaceae	perennial herb	(Apr)Jun-Oct	None	None	G2T2	S2	1B.2
Astragalus rattanii var. rattanii	Rattan's milk-vetch	Fabaceae	perennial herb	Apr-Jul	None	None	G4T4	S4	4.3
Cardamine angulata	seaside bittercress	Brassicaceae	perennial herb	(Jan)Mar-Jul	None	None	G4G5	S3	2B.2
Carex arcta	northern clustered sedge	Cyperaceae	perennial herb	Jun-Sep	None	None	G5	S1	2B.2
Carex leptalea	bristle-stalked sedge	Cyperaceae	perennial rhizomatous herb	Mar-Jul	None	None	G5	S1	2B.2
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	Apr-Aug	None	None	G5	S3	2B.2
Carex praticola	northern meadow sedge	Cyperaceae	perennial herb	May-Jul	None	None	G5	S2	2B.2
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	Apr-Aug	None	None	G4T2	S2	1B.2
Castilleja litoralis	Oregon coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Jun	None	None	G3	S3	2B.2
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	None	None	G4?T2	S2	1B.2
Chrysosplenium glechomifolium	Pacific golden saxifrage	Saxifragaceae	perennial herb	Feb-Jun	None	None	G5?	S3	4.3
Collinsia corymbosa	round-headed Chinese-houses	Plantaginaceae	annual herb	Apr-Jun	None	None	G1	S1	1B.2
Eleocharis parvula	small spikerush	Cyperaceae	perennial herb	(Apr)Jun-Aug(Sep)	None	None	G5	S3	4.3
Erysimum menziesii	Menzies' wallflower	Brassicaceae	perennial herb	Mar-Sep	FE	CE	G1	S1	1B.1
Erythronium revolutum	coast fawn lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4G5	S3	2B.2
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss		None	None	G3?	S2	1B.2

Gilia capitata ssp. pacifica	Pacific gilia	Polemoniaceae	annual herb	Apr-Aug	None	None	G5T3	S2	1B.2
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2
Glehnia littoralis ssp. leiocarpa	American glehnia	Apiaceae	perennial herb	May-Aug	None	None	G5T5	S2S3	4.2
Hesperevax sparsiflora var. brevifolia	short-leaved evax	Asteraceae	annual herb	Mar-Jun	None	None	G4T3	S3	1B.2
Hosackia gracilis	harlequin lotus	Fabaceae	perennial rhizomatous herb	Mar-Jul	None	None	G3G4	S3	4.2
Lasthenia californica ssp. macrantha	perennial goldfields	Asteraceae	perennial herb	Jan-Nov	None	None	G3T2	S2	1B.2
Lathyrus glandulosus	sticky pea	Fabaceae	perennial rhizomatous herb	Apr-Jun	None	None	G3	S3	4.3
Lathyrus japonicus	seaside pea	Fabaceae	perennial rhizomatous herb	May-Aug	None	None	G5	S2	2B.1
Lathyrus palustris	marsh pea	Fabaceae	perennial herb	Mar-Aug	None	None	G5	S2	2B.2
Layia carnosa	beach layia	Asteraceae	annual herb	Mar-Jul	FT	CE	G2	S2	1B.1
Lilium kelloggii	Kellogg's lily	Liliaceae	perennial bulbiferous herb	May-Aug	None	None	G3	S3	4.3
Lilium occidentale	western lily	Liliaceae	perennial bulbiferous herb	Jun-Jul	FE	CE	G1G2	S1	1B.1
Listera cordata	heart-leaved twayblade	Orchidaceae	perennial herb	Feb-Jul	None	None	G5	S4	4.2
Lycopodium clavatum	running-pine	Lycopodiaceae	perennial rhizomatous herb	Jun-Aug(Sep)	None	None	G5	S3	4.1
Mitellastra caulescens	leafy-stemmed mitrewort	Saxifragaceae	perennial rhizomatous herb	(Mar)Apr-Oct	None	None	G5	S4	4.2
Monotropa uniflora	ghost-pipe	Ericaceae	perennial herb (achlorophyllous)	Jun-Aug(Sep)	None	None	G5	S2	2B.2
Montia howellii	Howell's montia	Montiaceae	annual herb	(Feb)Mar-May	None	None	G3G4	S2	2B.2
Oenothera wolfii	Wolf's evening-primrose	Onagraceae	perennial herb	May-Oct	None	None	G2	S1	1B.1
Pityopus californicus	California pinefoot	Ericaceae	perennial herb (achlorophyllous)	(Mar-Apr)May-Aug	None	None	G4G5	S4	4.2
Pleuropogon refractus	nodding semaphore grass	Poaceae	perennial rhizomatous herb	(Mar)Apr-Aug	None	None	G4	S4	4.2
Puccinellia pumila	dwarf alkali grass	Poaceae	perennial herb	Jul	None	None	G5	SH	2B.2
Ribes laxiflorum	trailing black currant	Grossulariaceae	perennial deciduous shrub	Mar-Jul(Aug)	None	None	G5?	S3	4.3
Sidalcea malachroides	maple-leaved checkerbloom	Malvaceae	perennial herb	(Mar)Apr-Aug	None	None	G3	S3	4.2
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	Malvaceae	perennial rhizomatous herb	(Mar)May-Aug	None	None	G5T2	S2	1B.2
Sidalcea oregana ssp.	coast	Malvaceae	perennial herb	Jun-Aug	None	None	G5T1	S1	1B.2

eximia	checkerbloom								
Silene scouleri ssp. *scouleri*	Scouler's catchfly	Caryophyllaceae	perennial herb	(Mar-May)Jun-Aug(Sep)	None	None	G5T4T5	S2S3	2B.2
Spergularia canadensis var. *occidentalis*	western sand-spurrey	Caryophyllaceae	annual herb	Jun-Aug	None	None	G5T4	S1	2B.1
Sulcaria spiralifera	twisted horsehair lichen	Parmeliaceae	fruticose lichen (epiphytic)		None	None	G3G4	S2	1B.2
Trichodon cylindricus	cylindrical trichodon	Ditrichaceae	moss		None	None	G4G5	S2	2B.2
Usnea longissima	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)		None	None	G4	S4	4.2
Viola palustris	alpine marsh violet	Violaceae	perennial rhizomatous herb	Mar-Aug	None	None	G5	S1S2	2B.2

Showing 1 to 49 of 49 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 16 August 2022].

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
Phone: (707) 822-7201 Fax: (707) 822-8411

In Reply Refer To: July 06, 2022
Project Code: 2022-0060814
Project Name: Manila Drainage Project

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

To Whom It May Concern:

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

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

Project Summary

Project Code:	2022-0060814
Event Code:	None
Project Name:	Manila Drainage Project
Project Type:	Drainage Project
Project Description:	The Project, led by the Manila CSD, will incorporate multi-objective, multi-benefit project components that address flood reduction, ecosystem services, and resiliency to sea level rise and climate change.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.850741600000006,-124.16146390263467,14z

Counties: Humboldt County, California

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Pacific Marten, Coastal Distinct Population Segment *Martes caurina* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/9081	Threatened

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Fishes

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Beach Layia *Layia carnosa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6728	Threatened
Menzies' Wallflower *Erysimum menziesii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2935	Endangered
Western Lily *Lilium occidentale* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/998	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird *Selasphorus sasin* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Sep 30

NAME	BREEDING SEASON
Black Oystercatcher *Haematopus bachmani* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31
Black Swift *Cypseloides niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black Turnstone *Arenaria melanocephala* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Cassin's Finch *Carpodacus cassinii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31

NAME	BREEDING SEASON
Rufous Hummingbird *selasphorus rufus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds Jun 1 to Aug 10
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit *Chamaea fasciata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

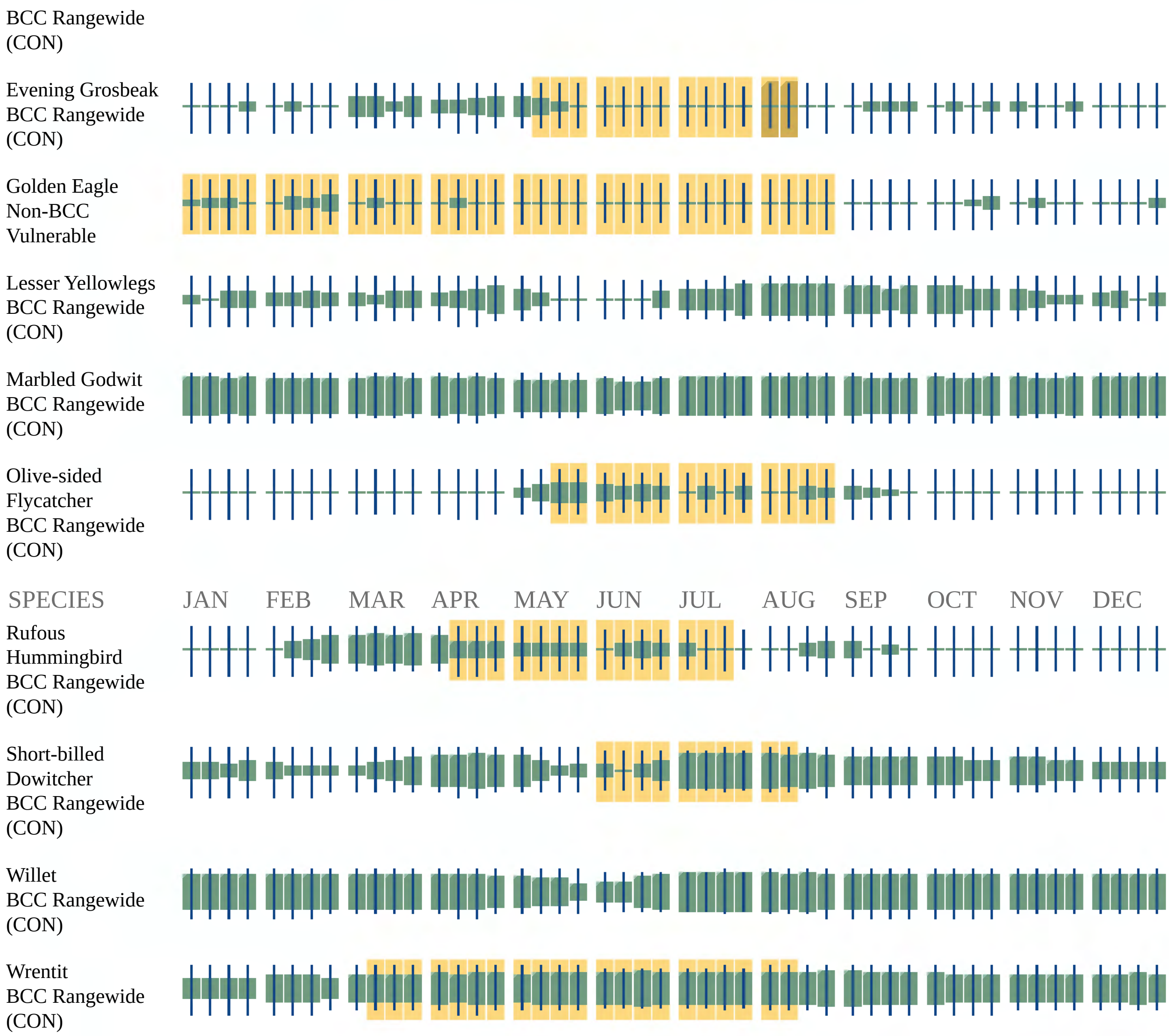
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

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Appendix C

List of Plant Species Observed on Site

Table C1 Plant species observed on-site, sorted by Family.

Scientific Name	Common Name	Native	Family
Agave sp.	agave	Non-native	Agavaceae
Carprobrotus chilensis	sea fig	Non-native	Aizoaceae
Alisma triviale	Northern water plantain	Native	Alismataceae
Atriplex prostrata	spear-leaved orache	Non-native	Amaranthaceae
Salicornia pacifica	pickleweed	Native	Amaranthaceae
Allium triquetrum	three-cornered leek	Non-native	Amaryllidaceae
Allium unifolium	ornamental onion	Non-native	Amaryllidaceae
Amarillis belladona	naked ladies	Non-native	Amaryllidaceae
Daucus carota	wild carrot	Native	Apiaceae
Hydrocotyl ranunculoides	floating pennywort	Non-native	Apiaceae
Oenanthe sarmentosa	water parsley	Native	Apiaceae
Vinca major	periwinkle	Non-native	Apocynaceae
Ilex aquifolium	English holly	Non-native	Aquifoliaceae
Lemna sp.	duckweed	Native	Araceae
Lysichiton americanus	skunk cabbage	Native	Araceae
Zantedescia aethiopica	calla lily	Non-native	Araceae
Hedera helix	English ivy	Non-native	Araliaceae
Cordyline australis	New Zealand cabbage tree	Non-native	Asparagaceae
Arctotheca calendula	Cape weed	Non-native	Asteraceae
Baccharis pilularis	coyote brush	Native	Asteraceae
Bellis perennis	daisy	Non-native	Asteraceae
Chamomilla swaveolus	chamomile	Non-native	Asteraceae
Cirsium vulgare	bull thistle	Non-native	Asteraceae
Conyza canadensis	horseweed	Non-native	Asteraceae
Corethrogyne filaginifolia	sandaster	Native	Asteraceae
Delairea odorata	cape/German ivy	Non-native	Asteraceae
Gamochaeta ustulata	featherweed	Native	Asteraceae
Gnaphalium palustre	cudweed	Native	Asteraceae
Helminthotheca echioides	prickly oxtongue	Non-native	Asteraceae
Hypochaeris radicata	cat's ear	Non-native	Asteraceae
Jaumea carnosa	marsh jaumea	Native	Asteraceae
Leucanthemum vulgare	oxe eye daisy	Non-native	Asteraceae
Matricaria discoidea	pineapple weed	Native	Asteraceae
Solidago spathulata	goldenrod	Native	Asteraceae
Soliva sessilis	field burweed	Non-native	Asteraceae
Sonchus oleraceus	prickly lettuce	Non-native	Asteraceae
Symphyotrichum chilense var. *chilense*	common California aster	Native	Asteraceae
Taraxacum officinale	dandelion	Non-native	Asteraceae
Athyrium filix-femina	lady fern	Native	Athyriaceae

Scientific Name	Common Name	Native	Family
Alnus rubra	red alder	Native	Betulacaea
Echium candicans	tower of jewels	Non-native	Boranginaceae
Symphytum officianalis	comfrey	Non-native	Boranginaceae
Brassica rapa	common mustard	Non-native	Brassicaceae
Cardamine hirsuta	hairy bittercress	Native	Brassicaceae
Raphanus raphinastrum	wild radish	Non-native	Brassicaceae
Lonicera involucrata	twinberry	Native	Caprifoliacea
Lonicera japonica	Japanese honesuckle	Non-native	Caprifoliacea
Cardionema ramosissimum	sand mat	Native	Caryophyllaceae
Limonium californicum	sea lavender	Native	Caryophyllaceae
Polycarpa tetraphyllum	fourleaf allseed	Non-native	Caryophyllaceae
Silene gallica	common catchfly	Non-native	Caryophyllaceae
Spergula arvensis	spurry	Non-native	Caryophyllaceae
Spergularia rubra	red sandspurry	Non-native	Caryophyllaceae
Stellaria media	chickweed	Non-native	Caryophyllaceae
Calystegia sepium	morning glory	Non-native	Convolvulaceae
Crassula connata	pigmy weed	Native	Crassulaceae
Hesperocyparis macrocarpa	Monterey cypress	Non-native	Cupressaceae
Sequoia sempervirens	redwood	Native	Cupressaceae
Carex lyngbyei (CRPR 2B.2)	Lyngbye's sedge	Native	Cyperaceae
Carex obnupta	slough sedge	Native	Cyperaceae
Cyperus eragrostis	tall flatsedge	Native	Cyperaceae
Eleocharis sp.	spikesedge	Native	Cyperaceae
Isolepis cernua	low bulrush	Native	Cyperaceae
Schoenoplectus californicus	California bulrush	Native	Cyperaceae
Scirpus microcarpus	small fruit bulrush	Native	Cyperaceae
Pteridium aquilinum	brackenfern	Native	Dennstaedtiaceae
Dryopteris arguta	wood fern	Native	Dryopteridaceae
Polystichum munitum	Western sword fern	Native	Dryopteridaceae
Equisetum laevigatum	smooth horsetail	Native	Equisetaceae
Equisetum telmateia	great horsetail	Native	Equisetaceae
Acacia dealbata	silver wattle	Non-native	Fabaceae
Acacia melanoxylon	Australian blackwood	Non-native	Fabaceae
Acmispon parviflorus	small-flowered lotus	Native	Fabaceae
Cytisus scoparius	Scotch broom	Non-native	Fabaceae
Fumaria capreolata	white-ramping fumitory	Non-native	Fabaceae
Lathyrus latifolius	sweet pea	Non-native	Fabaceae
Lathyrus tingitanus	tangier pea	Non-native	Fabaceae
Lotus corniculatus	big trefoil	Non-native	Fabaceae
Lupinus arboreus	yellow bush lupine	Non-native	Fabaceae

Scientific Name	Common Name	Native	Family
Lupinus bicolor	miniature lupine	Native	Fabaceae
Medicago arabica	spotted medic	Non-native	Fabaceae
Medicago polymorpha	burr clover	Non-native	Fabaceae
Trifolium arvense	hare's foot clover	Non-native	Fabaceae
Trifolium dubium	lesser trefoil	Non-native	Fabaceae
Trifolium pratense	red clover	Non-native	Fabaceae
Trifolium repens	white clover	Non-native	Fabaceae
Trifolium subterraneum	subterranean clover	Non-native	Fabaceae
Trifolium wormskioldii	cows clover	Non-native	Fabaceae
Vicia behnghalense	purple vetch	Non-native	Fabaceae
Vicia hirsuta	hairy vetch	Non-native	Fabaceae
Vicia nigricans	giant vicia	Non-native	Fabaceae
Vicia sativa	common vetch	Non-native	Fabaceae
Erodium cicutarium	redstem filaree	Non-native	Geraniaceae
Erodium moschatum	whitestem filaree	Non-native	Geraniaceae
Geranium dissectum	cutleaf geranium	Non-native	Geraniaceae
Geranium molle	dove's foot geranium	Non-native	Geraniaceae
Geranium robertianum	herb robert	Non-native	Geraniaceae
Malva neglecta	cheeseweed	Non-native	Geraniaceae
Escallonia rubra	red claws	Non-native	Grossulariaceae
Crocosmia sp.	crocosmia	Non-native	Iridacaea
Iris douglasiana	Douglas iris	Native	Iridacaea
Iris pseudacorus	bearded iris	Non-native	Iridacaea
Juncus balticus	wire rush	Native	Juncaceae
Juncus bolanderi	Bolander's rush	Native	Juncaceae
Juncus breweri	Brewer's rush	Native	Juncaceae
Juncus bufonius	toad rush	Native	Juncaceae
Juncus effusus	common rush	Native	Juncaceae
Juncus hesperius	bog rush	Native	Juncaceae
Juncus lescurii	dune rush	Native	Juncaceae
Triglochin maritima	saltmarsh arrowgrass	Native	Juncaginaceae
Mentha pulegium	pennyroyal	Non-native	Lamiaceae
Mentha spicata	spearmint	Non-native	Lamiaceae
Prunella vulgaris	common self-heal	Non-native	Lamiaceae
Stachys chamissonis	coastal hedgenettle	Native	Lamiaceae
Stachys rigida	rough hedgenettle	Native	Lamiaceae
Linum bienne	blue flax	Non-native	Linaceae
Malva arborea	tree mallow	Non-native	Malvaceae
Melianthus major	honey flower	Non-native	Melianthaceae
Claytonia perfoliata	niner's lettuce	Native	Montiaceae

Scientific Name	Common Name	Native	Family
Morella californica	California wax myrtle	Native	Myricaceae
Eucalyptus globulus	blue gum	Non-native	Myrtaceae
Fuchsia sp.	fuchsia	Non-native	Myrtales
Epilobium ciliatum	northern willow herb	Native	Onagraceae
Oxalis articulata	pink oxalis	Non-native	Oxalidaceae
Escscholzia californica	California poppy	Native	Papaveraceae
Escscholzia californica ssp. *maritima*	seaside California poppy	Native	Papaveraceae
Erythranthe guttata	yellow monkey flower	Native	Phrymaceae
Picea sitchensis	Sitka spruce	Native	Pinaceae
Pinus contorta	beach pine	Native	Pinaceae
Pinus radiata	Monterey pine	Non-native	Pinaceae
Plantago coronopus	cutleaf plantago	Non-native	Plantaginaceae
Plantago lanceolata	ribwort plantain	Non-native	Plantaginaceae
Plantago major	broadleaf plantain	Non-native	Plantaginaceae
Triphysaria pusilla	dwarf owl's clover	Native	Plantaginaceae
Veronica anagallis-aquatica	water speedwell	Non-native	Plantaginaceae
Veronica arvensis	wall speedwell	Non-native	Plantaginaceae
Agrostis stolonifera	creeping bentgrass	Non-native	Poaceae
Aira caryophyllea	silver hairgrass	Non-native	Poaceae
Alopecurus saccatus	Pacific foxtail	Native	Poaceae
Anthoxanthum odoratum	vernal sweet grass	Non-native	Poaceae
Avena barbata	slender wild oat	Non-native	Poaceae
Avena sativa	oats	Non-native	Poaceae
Briza maxima	rattlesnake grass	Non-native	Poaceae
Bromus carinatus	California brome	Native	Poaceae
Bromus catharticus	rescue grass	Non-native	Poaceae
Bromus diandrus	ripgut brome	Non-native	Poaceae
Bromus hordaceus	hairy brome	Non-native	Poaceae
Cortaderia jubata	pampas grass	Non-native	Poaceae
Dactylis glomerata	orchard grass	Non-native	Poaceae
Distichlis spicata	salt grass	Native	Poaceae
Festuca arundinacea	reed fescue	Non-native	Poaceae
Festuca bromoides	fescue	Non-native	Poaceae
Festuca perenne	Italian rye grass	Non-native	Poaceae
Glyceria declinata	small sweet grass	Non-native	Poaceae
Hainardia cylindrica	hard grass	Non-native	Poaceae
Holcus lanatus	soft chess	Non-native	Poaceae
Hordeum sp.	barley	Non-native	Poaceae
Phleum pratense	timothy grass	Non-native	Poaceae
Phyllostachys sp.	bamboo	Non-native	Poaceae

Scientific Name	Common Name	Native	Family
Poa annua	annual bluegrass	Non-native	Poaceae
Poa confinis	coastline bluegrass	Native	Poaceae
Poa macrantha	seashore bluegrass	Native	Poaceae
Poa pratensis	Kentucky bluegrass	Non-native	Poaceae
Spartina densiflora	dense cordgrass	Non-native	Poaceae
Eriogonum latifolium	beach buckwheat	Native	Polygonaceae
Muehlenbeckia sp.	wire vine	Non-native	Polygonaceae
Polygonum paronychia	beach knotweed	Native	Polygonaceae
Rumex acetosella	sheep sorrel	Non-native	Polygonaceae
Rumex crispus	curly dock	Non-native	Polygonaceae
Rumex occidentalis	western dock	Native	Polygonaceae
Polypodium calirhiza	California polypody	Native	Polypodiaceae
Lysimachia arvensis	scarlet pimpernel	Non-native	Primulaceae
Lysimachia arvensis	scarlet pimpernel	Non-native	Primulaceae
Ranunculus repens	buttercup	Non-native	Ranunculaceae
Frangula purshiana	cascara sagrada	Native	Rhamnaceae
Cotoneaster sp.	cotoneaster	Non-native	Rosaceae
Crataegus monogyna	common hawthorn	Non-native	Rosaceae
Fragaria chiloensis	beach strawberry	Native	Rosaceae
Potentilla anserina	silverweed	Native	Rosaceae
Prunus sp.	apple	Non-native	Rosaceae
Rosa sp.	ornamental rose	Non-native	Rosaceae
Rubus armeniacus	Himalayan blackberry	Non-native	Rosaceae
Rubus ursinus	California blackberry	Native	Rosaceae
Galium aparine	cleavers	Non-native	Rubiaceae
Salix hookeriana	Hooker's willow	Native	Salicaceae
Salix lasiandra	shining willow	Native	Salicaceae
Salix lasiolepis	arroyo willow	Native	Salicaceae
Myriophyllum aquaticum	parrot feather	Non-native	Saxifragaceae
Tolmiea menziesii	piggyback plant	Native	Saxifragaceae
Buddleja davidii	butterfly bush	Non-native	Scrophulariaceae
Scrophularia californica	California figwort	Native	Scrophulariaceae
Tropaeolum majus	garden nasturtium	Non-native	Tropaeolaceae
Typha latifolia	broadleaved cattail	Native	Typhaceae
Soleirolia soleirolii	baby's tears	Non-native	Urticaceae

Appendix D

Site Visit Photographs

Photo D-1. Lyngbye's sedge population on the shore of Humboldt Bay. View southeast from 40.851846°, -124.158772°.

Photo D-2. View north of Point Reyes salty bird's-beak population from 40.851922°, -124.158706°.

Photo D-3. View north of Humboldt Bay owl's-clover population from 40.851948°, -124.158651°.

Photo D-4. Close-up of Point Reyes salty bird's-beak.

Photo D-5. View of a culvert on the shore of Humboldt Bay. No rare plants were observed at this location.

Photo D-6. View of second culvert on the shore of Humboldt Bay. No special status plants were observed at this location.

Photo D-7. Herbaceous plant community along railroad tracks in the PSB. No special status plants were observed along the railroad tracks.

Photo D-8. Herbaceous plant community and Hooker's willows along railroad tracks. No special status plant species were observed along the railroad tracks.

Photo D-9. Understory and canopy structure in a portion of the PSB, north of the Manila Community Park, facing east. No special status plant species were observed in wooded areas.

Appendix E

Wildlife Habitat Assessment Memorandum

Technical Memorandum

16 August 2022

To	Brett Vivyan, GHD	**Tel**	1 707-267-2221
Copy to		**Email**	Sara.Moriarty-Graves@ghd.com, Andrea.Hilson@ghd.com
From	Sara Moriarty-Graves - GHD Wildlife Biologist	**Ref. No.**	12572691 Manila Drainage Project
Subject	Manila Drainage Project - Wildlife Habitat Assessment Technical Memorandum		

1. Introduction/Purpose

The Manila Community Services District (hereafter “Manila CSD”) proposes to make drainage improvements (hereafter “Project”) throughout the community of Manila, California (**Appendix A, Figure 1**). The Project will apply a community-wide approach to address persistent flooding and drainage problems caused by undersized, disconnected, and failing infrastructure. Simple solutions, consisting of vegetated bioswales, rain gardens, replacement of undersized and failing culverts, and new culverts in select locations are proposed. The Project, led by the Manila CSD, will incorporate multi-objective, multi-benefit project components that address flood reduction, ecosystem services, and resiliency to sea level rise and climate change. Bioswales will be graded and planted with native species along existing and new drainage paths. Existing undersized and or failing culverts will be replaced with new, larger capacity culverts ranging from 12 to 36 inches in diameter. New culverts will be installed in select locations, ranging from 18 to 24 inches in diameter. Rain gardens will be implemented along roadsides as well at the Manila Community Center to replace a concrete courtyard.

To assist with preparation of the Project’s California Environmental Quality Act (CEQA) document and environmental permitting, GHD evaluated the potential for sensitive wildlife species (federally- or state-listed or special status wildlife) to occur within the Project Study Boundary (PSB; **Appendix A, Figure 2**). In addition, potential Project impacts to these resources (if any), were evaluated.

Special status species and resources are the primary focus of this evaluation. Common species or resources without special protections are not considered. Potential impacts to special status plants, sensitive natural communities, and wetlands are evaluated in separate reports.

2. Survey Methods

2.1 Database Searches (CNDDB, IPaC, and EFH)

Database searches for special status wildlife records in the Project vicinity (seven-quad search area) were conducted by GHD on May 23, 2022. A nine-quad search was not completed due to the adjacency of the Pacific Ocean. The seven-quad search area was centered on the Project U.S. Geological Survey 7.5-

minute quadrangle (Eureka) and including the surrounding six quadrangles (Tyee City, Arcata North, Arcata South, McWhinney Creek, Field's Landing, Cannibal Island). Database searches (**Appendix B**) included:

– The California Natural Diversity Database (CNDDB; plant species and sensitive habitat records were excluded; CDFW 2022a). CNDDB results within a 3-mile radius are included in **Appendix A, Figure 3**.
– A resources list was obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC; USFWS 2022a) for the PSB on July 6, 2022.
– An Essential Fish Habitat (EFH) Mapper Report was obtained from NOAA Fisheries (2022a) for the PSB on June 6, 2022.

The National Oceanic and Atmospheric Administration (NOAA) Fisheries West Coast Region California Species Tool is no longer publicly available. However, the potential for known federally-listed species managed by NMFS are included in **Table 1.**

2.2 Site Visit

A reconnaissance-level site visit was conducted by Sara Moriarty-Graves, GHD Wildlife Biologist (hereafter surveyor), on May 24, 2022, from 07:00 to 12:30. Weather during the survey included overcast to cloudy skies, about 50 degrees Fahrenheit, with light air to a gentle breeze (Beaufort scale 1-3).

The surveyor walked the entire PSB on Peninsula Drive (**Appendix A, Figure 2**). Due to property access constraints in residential areas, portions of the PSB were inaccessible. Inaccessible areas were assessed audibly by species' sounds and visually with binoculars.

Where property access and the habitat allowed the surveyor to walk without risk of damaging nests or dens and surrounding vegetation, the survey included a physical search of the area. This included inspecting the ground, shrubs, culverts, holes, and trees for the presence of any wildlife species. Additionally, the bark of vegetation and the ground layer under vegetation were inspected for evidence of wildlife species, such as feathers, pellets, whitewash, scat, tracks, etc. Where the habitat was dense or otherwise impenetrable or inaccessible, observations were made from fixed locations. This reconnaissance-level survey was conducted to identify general wildlife resources and habitat as well as wildlife activity in the PSB. No protocol-level surveys for special status wildlife were conducted at this time.

3. Results

3.1 Summary of General Biological Resources

The Project is located in the community of Manila, California, in residential areas, along roadways, railroad tracks, areas owned by Manila CSD (such as the Manila Community Park), and in undeveloped drainage areas. Residential homes are primarily located along Peninsula Drive, and the railroad tracks are mainly adjacent to the road. Adjacent land use includes residential private property, recreation in the Samoa and Manila Dunes, few private businesses, and the Redwood Coast Montessori school at the Manila Community Center.

Most of the vegetation on either side of the railroad tracks is composed of a dense shrub understory with native and non-native species, and deciduous trees, including willow (*Salix sp.*) and the occasional alder (*Alnus rubra*). Peninsula Drive is predominantly lined by herbaceous shrubs where houses were not present, landscaped vegetation on residential properties, and few mature conifer trees, including Monterey pines (*Pinus radiata*). Drainage ditches with stagnant water were present in portions of the PSB along Peninsula Drive on the east side of State Route 255. The Project area within the Manila Community Park includes undeveloped vegetated areas with minimal water present. Portions of the Project extend to Humboldt Bay shoreline, which is a tidally inundated marsh with bird species present. On the southern end of the Project west of State Route 255, adjacent areas more commonly contained shrubs, forbs, and coastal dune habitat.

3.2 Habitat Conservation Plans and Natural Community Conservation Plans

Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs) are site-specific plans to address effects on sensitive species of plants and animals. The PSB does not overlap any existing active or proposed HCPs or NCCPs according to a current list from the USFWS (USFWS 2022b) and the CDFW list of Natural Community Conservation Plans (CDFW 2022b).

3.3 Critical Habitat and Essential Fish Habitat

The PSB does not overlap any federally designated critical habitat. Assuming ground disturbance does not require any in-water work in Humboldt Bay, Critical Habitat and Essential Fish Habitat would not be affected. However, if ground disturbance does extend into Humboldt Bay and in-water work is required, Essential Fish Habitat for Groundfish, Coho Salmon, Chinook Salmon, and coastal pelagic species would be disturbed.

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) requires that Essential Fish Habitat (EFH) be identified for all federally managed species including all species managed by the Pacific Fisheries Management Council (PFMC). EFH has been defined for the purposes of the MSFCMA as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." NOAA Fisheries has further added the following interpretations to clarify this definition:

– "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate;

– "Substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities;

– "Necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and

– "Spawning, breeding, feeding, or growth to maturity" covers the full life cycle of a species.

Adverse effect means any effect that reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), or site-specific or habitat-wide effects, including individual, cumulative, or synergistic consequences of actions.

The PFMC is responsible for managing commercial fisheries resources along the coast of Washington, Oregon, and California. The PFMC is "guided by the principle that there should be no net loss of the productive capacity of marine, estuarine, and freshwater habitats that sustain commercial, recreational, and tribal salmon fisheries beneficial to the nation" (PFMC 2021). EFH applies to species within the PSB for the proposed Project. Under the MSFCMA, Humboldt Bay is designated as EFH within the Pacific Coast for Groundfish and coastal pelagic species. Humboldt Bay and land within the PSB are also designated EFH for Coho Salmon and Chinook Salmon.

3.4 Habitat Connectivity

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Maintaining the continuity of established wildlife corridors is important to: (a) sustain species with specific foraging requirements, (b) preserve a species' distribution potential, and (c) retain genetic diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

No Essential Connectivity Areas have been identified within the PSB, and the nearest is approximately 20 miles east (CDFW 2022c). However, based on the observation of the riparian habitat, dense understory, and deciduous tree canopy cover, the area within and adjacent to the Manila Community Park has the potential to function as a riparian corridor for bird species. Shrub cover along drainage areas, roads, and railroad tracks may facilitate the movement of songbird species, provide nesting habitat, and provide cover from predator species by acting as a hedgerow (Hinsley and Bellamy 2000). Although these features facilitate connectivity, this is a highly disturbed area by recreationalists in the Manila Community Park and vehicular traffic, which can negatively influence reproductive success (Holm and Laursen 2011). Residential roads and State Route 255 may also be barriers to certain species' movement.

The PSB is not located within or near a “natural landscape block” identified in the California Essential Habitat Connectivity Project. The nearest natural landscape block is located approximately 14 miles northeast of the PSB (CDFW 2022c). There is hydrologic connectivity between small portions of the PSB and the margins of Humboldt Bay. The Project does not include any elements that would impede migration of native resident or migratory fish. The Project also does not include any elements that would result in a new barriers to terrestrial wildlife movement. The Project would not interfere with the migration of birds, bats, or other species.

3.5 Special Status Wildlife

3.5.1 Wildlife Species Observed On-site

Various species (mainly birds) were observed within the PSB during the May 24, 2022, reconnaissance-level site visit. One special status bird species (Great Egret; California Department of Forestry and Fire Protection Sensitive) was observed flying over the study area. Additionally, one special status insect (Western Bumble Bee; United States Forest Service Sensitive) was observed.

Tables of all wildlife species detected during the site visit are presented in **Tables D1** and **D3 (Appendix D**). **Table D2** is a list of avian breeding codes, associated bird behaviour, and breeding status. **Tables D1** and **D3** are not intended to be comprehensive lists of all species that could occur within the PSB as no protocol level surveys have been conducted.

3.5.2 Federally-listed Wildlife Species

Twenty federally-listed or candidate wildlife species that are regulated by the USFWS and NOAA Fisheries under the federal Endangered Species Act (ESA) were identified during scoping in the Project vicinity (i.e., the seven-quad search area). Based on habitat evaluations during the reconnaissance survey, and a database and literature review, it was determined that the PSB does not provide suitable habitat for any of these species, and justification for exclusion from further consideration is detailed in **Table 1.** The Monarch butterfly (overwintering, pop. 1) is a federal candidate and has a low potential to occur in the area based on general habitat in the PSB and lack of milkweed (*Asclepias syriaca*) being present. The nearest known overwintering location is in northern Mendocino County (Western Monarch Count 2022).

3.5.3 State-Listed Wildlife Species

Ten state-listed wildlife species (seven of which are also federally-listed) that are regulated by the CDFW under the California Endangered Species Act (CESA) were identified during scoping in the Project vicinity (i.e., the seven-quad search area). Based on habitat evaluations during the reconnaissance survey, and a database and literature review, the PSB does not provide suitable habitat for eight of these species, and justification for exclusion from further consideration is detailed in **Table 1**. The Bald Eagle is a state endangered species and has a moderate potential to occur within or adjacent to the PSB. However, suitable nesting habitat is not available within the PSB, and the species would be more likely to fly over. The Bank Swallow is a state threatened species and has a moderate potential to occur based on known occurrences and the suitable habitat within and directly adjacent to the PSB.

3.5.4 Other Special Status Wildlife Species

Thirty-nine other special status wildlife species were identified during scoping in the Project vicinity (i.e., the seven-quad search area). These species are considered special status species based on a global or state rank, or special designations from various agencies (including CDF, USFS, and BLM; see **Table 1** for details on designations). Based on habitat evaluations during the reconnaissance survey, and a database and literature review, the PSB does not provide suitable habitat for 27 of these species, and justification for exclusion from further consideration is detailed in **Table 1.** Two mammals (Townsend’s Big-eared Bat and Long-Eared Myotis), eight bird species, and one amphibian (Northern Red-legged Frog) have a moderate to high potential to occur within the PSB during construction. One special status bird (Great Egret) and one insect (Western Bumble Bee) were observed during the reconnaissance site visit. Potential impacts are discussed in **Section 4**.

Based on occurrence records, habitat availability, and the reconnaissance site visit, 14 special status wildlife species (including two state-listed bird species; Bald Eagle and Bank Swallow) have a moderate or higher potential to occur within or nearby the PSB. Nonetheless, trees and shrubs on-site (especially within the northern portion of the PSB north of the Manila Community Park) may provide suitable nesting habitat for common avian species protected by the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (FGC). Representative photos of habitat in the PSB taken on May 24, 2022, are included in **Appendix C**.

Table 1 ***Special Status Wildlife Species Potential to Occur within the Project Study Boundary (PSB)***

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
Mammals								
Aplodontia rufa humboldtiana	Humboldt Mountain Beaver	None	None	G5TNR	SNR		Coastal scrub; Redwood; Riparian forest. Coast Range in southwestern Del Norte County and northwestern Humboldt County. Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory.	**Low potential**. The habitat structure and extent is marginally suitable for the species. No observations have been recorded nearby (iNaturalist 2022).
Arborimus albipes	White-footed Vole	None	None	G3G4	S2	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	North coast coniferous forest; Redwood; Riparian forest. Mature coastal forests in Humboldt and Del Norte counties. Prefers areas near small, clear streams with dense alder and shrubs. Occupies the habitat from the ground surface to the canopy. Feeds in all layers and nests on the ground under logs or rock.	**Low potential.** No suitable habitat of mature coastal forest stands is present within the PSB. However, the PSB is located near a stream with a dense understory.
Arborimus pomo	Sonoma Tree Vole	None	None	G3	S3	CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened	North coast coniferous forest; Old growth; Redwood North coast fog belt from Oregon border to Somona County. In Douglas-fir, redwood and montane	**No potential.** No suitable habitat of old growth or Douglas fir stands is present within the PSB.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	
Balaenoptera borealis	Sei Whale	FE	None			MMPA Protected	Marine.	**No potential.** There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Balaenoptera musculus	Blue Whale	FE	None	G3G4	N1	MMPA Protected	Marine.	**No potential.** There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Balaenoptera physalus	Fin Whale	FE	None	G3G4	N2	MMPA Protected	Marine.	**No potential.** There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Corynorhinus townsendii	Townsend's Big-eared Bat	None	None	G4	S2	BLM_S-Sensitive | CDFW_SSC-Species of	Broadleaved upland forest; Chaparral; Chenopod scrub;	**Moderate potential.** The species was detected in October

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
						Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Great Basin grassland; Great Basin scrub; Joshua tree woodland; Lower montane coniferous forest; Meadow & seep; Mojavean desert scrub; Riparian forest; Riparian woodland; Sonoran desert scrub; Sonoran thorn woodland; Upper montane coniferous forest; alley & foothill grassland. Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	2021 directly adjacent to the PSB (BAMVT 2022). Marginally suitable roosting areas present within the PSB. This species is known to roost in buildings and alternatively larger trees, and forages around edge habitat and riparian corridors (Fellers and Pierson 2002). No work on buildings is being conducted and few large trees are present within the PSB. However, if tree removal is to occur, measures should be considered to reduce disturbance.
Erethizon dorsatum	North American Porcupine	None	None	G5	S3	IUCN_LC-Least Concern	Broadleaved upland forest; Cismontane woodland; Closed-cone coniferous forest; Lower montane coniferous forest; North coast coniferous forest; Upper montane coniferous forest. Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges. Wide variety of	**Low potential.** Habitat in the PSB is not preferred. However, an observation was recorded approximately 6 miles from the PSB on October 2, 2021 (iNaturalist 2022).

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							coniferous and mixed woodland habitat.	
Eschrichtius robustus	Gray Whale	None	None	G4	N4	MMPA Protected	Marine	**No potential.** There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Eubalaena japonica	North Pacific Right Whale	FE	None	G1	N1	MMPA Protected	Marine.	**No potential.** There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Eumetopias jubatus	Steller Sea Lions	None	None	G3	S2	MMPA Protected	Marine and bay.	**No potential.** There is no work in marine habitat proposed and the sections that extend into the Humboldt Bay are unsuitable for the species to occur (no mudflat habitat).
Martes caurina humboldtensis	Humboldt Marten	Threatened	Endangered	G4G5T1	S1	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	North coast coniferous forest; Old growth; Redwood. Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County. Associated with late-successional	**No potential.** There is no suitable old growth forest needed for foraging or denning within or nearby the PSB.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							coniferous forests, prefer forests with low, overhead cover.	
Megaptera novaeangliae	Humpback Whale	FE	None	G4	N3	MMPA Protected	Marine.	**No potential.** There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Myotis evotis	Long-eared Myotis	None	None	G5	S3	BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.	**Moderate potential.** The species was detected directly adjacent to the PSB one night in August 2021 (BAMVT 2022). The species is known to use conifer stumps and snags as day-roosts (Waldien et al. 2000). There is bark and snag habitat for nursery colonies within the PSB. If tree removal is to occur, measures should be considered to reduce disturbance.
Orcinus orca	Southern Resident Killer Whale	FE	None	G4G5T1	N1	MMPA Protected	Marine.	**No potential.** There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
								suitable for this species.
Orcinus orca	West Coast Transient Killer Whale	None	None	G4G5T3Q	NNR	MMPA Protected	Marine.	**No potential.** There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Pekania pennanti	Fisher	None	None	G5	S2S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	North coast coniferous forest; Old growth; Riparian forest. Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	**No potential.** There is no suitable old growth forest needed for foraging or denning within or nearby the PSB.
Phoca vitulina richardii	Pacific Harbor Seal	None	None	G5T5Q	N5	MMPA Protected	Marine and bay.	**No potential.** There is no work in marine habitat proposed and the sections that extend into the Humboldt Bay are unsuitable for the species to occur. Observed Harbor Seal haul outs in Humboldt Bay are limited to mudflats, which are not

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
								present in the PSB (CDFW 2012).
Phocoena phocoena	Harbor Porpoise	None	None	G4G5	N4N5	MMPA Protected	Marine and bay.	**Low potential.** There is no work in marine habitat proposed and the sections of the PSB that extend into the Humboldt Bay are shallow. Numerous observations of the species have been recorded within 8 miles from the PSB at the entrance channel into the Humboldt Bay, as recent as June 6, 2022 (iNaturalist 2022). If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Physeter macrocephalus	Sperm Whale	FE	None	G3G4	NU	MMPA Protected	Marine.	**No potential.** There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Zalophus californianus	California Sea Lion	None	None	G5	N4	MMPA Protected	Marine and bay.	**No potential.** There is no work in marine habitat proposed and the sections that extend into the Humboldt Bay are unsuitable for the

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
								species to occur. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species. Mudflats or docks are not present.
Birds								
Accipiter striatus	Sharp-shinned Hawk	None	None	G5	S4	CDFW_WL-Watch List | IUCN_LC-Least Concern	Cismontane woodland; Lower montane coniferous forest; Riparian forest; Riparian woodland. Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.	**Low potential.** Marginally suitable habitat is located nearby the PSB and on the portion of the PSB that is on the northeast corner of the Manila Community Park. An observation was recorded within 4 miles of the PSB on May 14, 2022.
Ardea alba	Great Egret	None	None	G5	S4	CDF_S-Sensitive | IUCN_LC-Least Concern	Brackish marsh; Estuary; Freshwater marsh; Marsh & swamp; Riparian forest; Wetland Colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	**Present.** Observed flying over the study area during the site visit. Additionally, observations were recorded recently within one mile from the PSB (eBird 2022). Marginally suitable habitat within and adjacent to the PSB. Suitable nesting habitat is available in the portion of the PSB on the northeast corner of

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
								the Manila Community Park.
Ardea herodias	Great Blue Heron	None	None	G5	S4	CDF_S-Sensitive | IUCN_LC-Least Concern	Brackish marsh; Estuary; Freshwater marsh; Marsh & swamp; Riparian forest; Wetland Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	**Moderate potential.** Observations were recorded recently within one mile from the PSB (eBird 2022). Marginally suitable habitat is present within and nearby the PSB. Suitable nesting habitat is available in the portion of the PSB on the northeast corner of the Manila Community Park.
Brachyramphus marmoratus	Marbled Murrelet	Threatened	Endangered	G3	S2	CDF_S-Sensitive | IUCN_EN-Endangered | NABCI_RWL-Red Watch List	Lower montane coniferous forest; Old growth; Redwood. Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	**No potential.** No suitable habitat of old growth stands is available within or nearby the PSB.
Charadrius montanus	Mountain Plover	None	None	G3	S2S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened | NABCI_RWL-Red Watch List | USFWS_BCC-Birds of	Chenopod scrub; valley & foothill grassland. Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers	**No potential.** No suitable habitat is present within the PSB. Species was recorded in an agricultural area within 5 miles from the PSB in 2012 (eBird 2022).

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
						Conservation Concern	grazed areas and areas with burrowing rodents.	
Charadrius nivosus nivosus	Western Snowy Plover	Threatened	None	G3T3	S2	CDFW_SSC-Species of Special Concern | NABCI_RWL-Red Watch List	Great Basin standing waters; Sand shore; Wetland Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**No potential.** No suitable habitat is present within the PSB.
Circus hudsonius	Northern Harrier	None	None	G5	S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Coastal scrub; Great Basin grassland; Marsh & swamp; Riparian scrub; Valley & foothill grassland; Wetland Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**Moderate potential.** Numerous recent sightings have been recorded within one mile of the PSB (eBird 2022). Marginally suitable habitat for nesting in limited areas of the PSB, such as in the portion of the PSB on the northeast corner of the Manila Community Park. However, it is more likely for the species to fly over.
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	FT	SE	G5T2T3	S1		Riparian forest. Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**No potential.** No suitable habitat is present in the study area.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
Coturnicops noveboracensis	Yellow Rail	None	None	G4	S1S2	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | NABCI_RWL-Red Watch List | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Freshwater marsh; Meadow & seep. Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	**No potential.** There is no suitable habitat within the area. One observation was recorded ~4 miles from the PSB in Eureka, California in 2013 (eBird 2022).
Egretta thula	Snowy Egret	None	None	G5	S4	IUCN_LC-Least Concern	Marsh & swamp; Meadow & seep; Riparian forest; Riparian woodland; Wetland. Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	**Moderate potential.** Several sightings have been recorded before March 2021 within one mile of the PSB (eBird 2022).
Elanus leucurus	White-Tailed Kite	None	None	G5	S3S4	BLM_S-Sensitive | CDFW_FP-Fully Protected | IUCN_LC-Least Concern	Cismontane woodland; Marsh & swamp; Riparian woodland; Valley & foothill grassland; Wetland. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes	**Moderate potential.** Several sightings have been recorded before April 2021 within one mile of the PSB (eBird 2022). Suitable nesting and perching habitat is directly adjacent to the PSB.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							for foraging close to isolated, dense-topped trees for nesting and perching.	
Haliaeetus leucocephalus	Bald Eagle	Delisted	Endangered	G5	S3	BLM_S-Sensitive | CDF_S-Sensitive | CDFW_FP-Fully Protected | IUCN_LC-Least Concern | USFS_S-Sensitive	Lower montane coniferous forest; Old growth. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	**Moderate potential.** The species has recently been observed in 2022 within one mile of the PSB (eBird 2022). However, suitable nesting habitat is not available within the PSB.
Nannopterum auritum	Double-Crested Cormorant	None	None	G5	S4	CDFW_WL-Watch List | IUCN_LC-Least Concern	Riparian forest; Riparian scrub; Riparian woodland. Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	**Moderate Potential.** Numerous observations have been observed within one mile of the PSB (eBird 2022).
Nycticorax nycticorax	Black-Crowned Night Heron	None	None	G5	S4	IUCN_LC-Least Concern	Marsh & swamp; Riparian forest; Riparian woodland; Wetland. Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake	**Moderate potential.** Numerous observations have been observed within one mile of the PSB before 2019 (eBird 2022).

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							margins, mud-bordered bays, marshy spots.	
Pandion haliaetus	Osprey	None	None	G5	S4	CDF_S-Sensitive | CDFW_WL-Watch List | IUCN_LC-Least Concern	Riparian forest. Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	**Moderate potential.** Numerous recent observations (last observation in April 2022; eBird 2022). Suitable foraging habitat adjacent to the PSB in the Humboldt Bay.
Rallus obsoletus obsoletus	California Ridgway's Rail	Endangered	Endangered	G3T1	S1	CDFW_FP-Fully Protected | NABCI_RWL-Red Watch List	Brackish marsh; Marsh & swamp; Salt marsh; Wetland. Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**No potential.** Humboldt County is outside of the currently known range.
Riparia riparia	Bank Swallow	None	Threatened	G5	S2	BLM_S-Sensitive | IUCN_LC-Least Concern	Riparian scrub; Riparian woodland. Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**Moderate potential.** An observation was recorded within one mile of the PSB in August 2021 (eBird 2021). Suitable habitat is present within and nearby the PSB.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
Strix occidentalis caurina	Northern Spotted Owl	FT	ST	G3T3	S2S3		North coast coniferous forest; Old growth; Redwood. Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of big trees. High, multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris, and space under canopy.	**No potential.** There is no suitable nesting habitat within or immediately adjacent to the PSB.
Reptiles								
Chelonia mydas	Green Sea Turtle (Pacific Region; Region 1)	FT	None	G3	S4		Generally found in fairly shallow waters (except when migrating) inside reefs, bays, and inlets. The turtles are attracted to lagoons and shoals with an abundance of marine grass and algae. Open beaches with a sloping platform and minimal disturbance are required for nesting.	**No potential.** Although the species has been recorded on the Pacific coast, the species is more likely to occur in tropical waters south of California. The species was observed in Sonoma County, California (California Herps 2022). There is no suitable open beach or sloping platform for nesting within or nearby the PSB.
Chelonia mydas	Green Sea Turtle aka East Pacific Green Sea Turtle	FT	None	G3	S1	IUCN_EN-Endangered	Marine bay. Marine. Completely herbivorous; needs adequate supply of seagrasses and algae. Enters temperate waters in the summer.	**No potential.** Although the species has been recorded on the Pacific coast, the species is more likely to occur in tropical waters south of California. The species was observed in

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
								Sonoma County, California (California Herps 2022).
Dermochelys coriacea	Leatherback Sea Turtle	FE	None				Pelagic, living in the open ocean and occasionally entering the shallower water of bays and estuaries.	**No potential.** Although the Humboldt Bay encompasses the species range, observations and nesting locations have been recorded south of Sonoma County, California (California Herps 2022).
Emys marmorata	Western Pond Turtle	None	None	G3G4	S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable | USFS_S-Sensitive	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Low Potential.** Marginally suitable perennial aquatic or upland habitat is present within or nearby the PSB.
Lepidochelys olivacea	Olive Ridley Sea Turtle	FT	None				Marine. Found well out to sea and in protected, relatively shallow bays and lagoons and the shallow water between reefs and the shore.	**Low potential.** Humboldt County is considered a less common range for the species. However, the species was observed in Table Bluff, Humboldt County, California, in 2009 (California Herps 2022).
Amphibians								

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
Ascaphus truei	Pacific Tailed Frog	None	None	G4	S3S4	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Aquatic; Klamath/North coast flowing waters; Lower montane coniferous forest; North coast coniferous forest; Redwood; Riparian forest. Occurs in montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine habitats. Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.	**No potential.** No suitable perennial montane streams or coniferous forest habitat present within or nearby the PSB.
Rana aurora	Northern Red-Legged Frog	None	None	G4	S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Klamath/North coast flowing waters; Riparian forest; Riparian woodland. Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	**Moderate potential.** An observation was recorded in March 2020 within one mile of the PSB (iNaturalist 2022). Suitable habitat is present in limited areas of the PSB, including the portion of the PSB in the northeast corner of the Manila Community Park.
Rana boylii	Foothill Yellow-Legged Frog	None	Endangered	G3	S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened |	Aquatic; Chaparral; Cismontane woodland; Coastal scrub; Klamath/North coast flowing waters; Lower montane coniferous forest;	**No potential.** No suitable shallow streams or substrate for egg-laying present in the PSB.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
						USFS_S-Sensitive	Meadow & seep; Riparian forest; Riparian woodland; Sacramento/San Joaquin flowing waters. Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	
Rhyacotriton variegatus	Southern Torrent Salamander	None	None	G3G4	S2S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Lower montane coniferous forest; Old growth; Redwood; Riparian forest. Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest. Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water.	**Low potential.** No suitable permanent streams present within the PSB. An observation was recorded in March 2022 within one mile of the PSB (iNaturalist 2022).
Fish								
Acipenser medirostris	Green Sturgeon	None	None	G3	S1	AFS_VU-Vulnerable | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters. These are the most marine species of sturgeon.	**No potential.** No perennial aquatic habitat is present within the PSB. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity Rivers. Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	habitat would not be suitable for this species.
Acipenser medirostris pop. 1	Green Sturgeon - Southern DPS	FT	None	G3	S1	SSC	Coastal watersheds south of the Eel River with spawning confirmed in the Sacramento River system and present in Humboldt Bay. These are the most marine species of sturgeon. Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	**Low potential.** The PSB extends to small portions of the Humboldt Bay. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
Entosphenus tridentatus	Pacific Lamprey	None	None	G4	S3	AFS_VU-Vulnerable | BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters; South coast flowing waters. Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is	**No Potential.** No perennial aquatic habitat is present within or nearby the PSB. Anadromous habitat (freshwater tributary) is not present in or near the PSB.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							declining. Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	
Eucyclogobius newberryi	Tidewater Goby	Endangered	None	G3	S3	AFS_EN-Endangered | IUCN_VU-Vulnerable	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters; South coast flowing waters. Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	**Low Potential.** No suitable habitat is present within or nearby the PSB. If in-water work occurs along the Humboldt Bay shoreline, the potential to occur would increase to **Moderate.**
Lampetra richardsoni	Western Brook Lamprey	None	None	G4G5	S3S4	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Found in the Sacramento River basin northward into British Columbia. Requires fine gravel beds for spawning. Larvae burrow in fine sediment.	**No Potential.** No perennial aquatic habitat is present within the PSB or within 0.5 miles. Anadromous habitat (freshwater tributary) is not present in or near the PSB.
Oncorhynchus clarkii clarkii	Coast Cutthroat Trout	None	None	G5T4	S3	AFS_VU-Vulnerable | CDFW_SSC-Species of Special Concern	Aquatic; Klamath/North coast flowing waters. Small coastal streams from the Eel River to the	**No Potential.** No perennial aquatic habitat is present within the PSB or within 0.5 miles. Anadromous

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
						| USFS_S-Sensitive	Oregon border. Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning.	habitat (freshwater tributary) is not present in or near the PSB.
Oncorhynchus tshawytscha	Chinook Salmon – California Coastal ESU	Threatened					Rivers and streams south of the Klamath River to the Russian River.	**No potential.** There is no suitable rivers or streams within or nearby the PSB. If in-water work occurs along the Humboldt Bay shoreline, the potential to occur would increase to **Moderate.**
Oncorhynchus kisutch pop. 2	Coho Salmon - Southern Oregon / Northern California ESU	Threatened	Threatened	G5T2Q	S2	AFS_TH-Threatened	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters. Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California. State listing refers to populations between the Oregon border and Punta Gorda, California.	**No Potential.** No perennial aquatic habitat is present within the PSB or within 0.5 miles. If in-water work occurs along the Humboldt Bay shoreline, the potential to occur would increase to **Moderate.**
Oncorhynchus mykiss irideus pop. 16	Steelhead - Northern California DPS	Threatened	None	G5T2T3Q	S2S3	AFS_TH-Threatened	Aquatic; Sacramento/San Joaquin flowing waters. Coastal basins from Redwood Creek south to the Gualala River,	**No Potential.** No perennial aquatic habitat is present within the PSB or within 0.5 miles. If in-water work occurs along the Humboldt Bay

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							inclusive. Does not include summer-run steelhead.	shoreline, the potential to occur would increase to **Moderate.**
Spirinchus thaleichthys	Longfin Smelt	Candidate	Threatened	G5	S1		Aquatic; Estuary. Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	**No Potential.** No perennial aquatic habitat is present within the PSB or within 0.5 miles. If in-water work occurs along the Humboldt Bay shoreline, the potential to occur would increase to **Moderate.**
Thaleichthys pacificus	Eulachon	Threatened	None	G5	S2		Aquatic; Klamath/North coast flowing waters. Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	**No Potential.** No perennial aquatic habitat is present within the PSB or within 0.5 miles.
Insects								
Bombus caliginosus	Obscure Bumble Bee	None	None	G2G3	S1S2	IUCN_VU-Vulnerable	Coastal areas from Santa Barbara County to north to Washington state. Food plant genera include Baccharis, Cirsium, Lupinus,	**Low Potential.** The PSB falls within the species current range, but the preferred shrubland and grassland habitat is not available (Hatfield et al. 2014).

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							Lotus, Grindelia and Phacelia.	
Bombus crotchii	Crotch Bumble Bee	None	None	G2	S1S2		Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	**No potential.** The PSB does not fall within the species current range. The preferred grassland and scrub habitat is not available (Hatfield et al. 2015a).
Bombus occidentalis	Western Bumble Bee	None	None	G2G3	S1	USFS_S-Sensitive	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	**Present.** Observed during the site visit at the railroad intersection with Sandy Road. The PSB falls within the species current range. Available habitat (open grassy areas and urban park) is available within the PSB (Hatfield et al. 2015b). Limited patches of nectar plants needed for foraging are present (Hatfield et al. 2015b).
Cicindela hirticollis gravida	Sandy Beach Tiger Beetle	None	None	G5T2	S2		Coastal dunes. Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not	**No potential.** No suitable sand habitat is available within the PSB.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur
							affected by wave action.	
Danaus plexippus	Monarch Butterfly – California overwintering, pop. 1	FC	None	G4T2T3	S2S3		Fields, roadside areas, open areas, wet areas or urban gardens. This species only lays eggs on milkweed. Overwintering tree habitat includes eucalyptus, Monterey pine, Monterey cypress, western sycamore, coast redwood, and coast live oak trees.	**Low potential.** General habitat is present within the PSB. An observation was recorded ~2.5 miles from the PSB in September 2021 (iNaturalist 2022). However, milkweed was not observed during the site visit.
Scaphinotus behrensi	Behrens' Snail-Eating Beetle	None	None	G2G4	S2S4		North coast coniferous forest. Found in extreme NW CA along the coast.	**No potential.** No suitable coniferous forest habitat is available within the PSB.
Mollusks								
Anodonta californiensis	California Floater	None	None	G3Q	S2?	USFS_S-Sensitive	Aquatic. Freshwater lakes and slow-moving streams and rivers. Taxonomy under review by specialists. Generally in shallow water.	**No potential.** No suitable aquatic habitat or host fish available within the PSB.
Margaritifera falcata	Western Pearlshell	None	None	G4G5	S1S2		Aquatic. Prefers lower velocity waters.	**No potential.** No suitable aquatic habitat available within the PSB.
Footnotes: [1] Rankings from CNDDB (January 2022). [2] General habitat, and microhabitat column information, reprinted from CNDDB (January 2022).								
Column Header Categories and Abbreviations:								

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur

FESA: Listing status under the federal Endangered Species Act (ESA)

FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; FD = Federally Delisted

CESA: Listing status under the California state Endangered Species Act (CESA)

SE = State Endangered; SD = State Delisted; ST = State Threatened.

Global Rank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. Subspecies/variety level: "Subspecies/varieties receive a T-rank attached to the G-rank. With the subspecies/varieties, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety" (CDFW 2022d); ? = " Denotes inexact numeric rank" (NatureServe 2022); Q = " Questionable taxonomy that may reduce conservation priority" (NatureServe 2022)

State Rank: State Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of imperilment in the state (California) - S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state; S4 = Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors; S5 = Secure—Common, widespread, and abundant in the state; SNR = State Not Ranked.

Other Statuses (other federal or state listings may include):

AFS_TH (American Fisheries Society Threatened):"a taxon that is in imminent danger of becoming endangered throughout all or a significant portion of its range" (Jelks et al. 2008).

AFS_VU (American Fisheries Society Vulnerable): "a taxon that is in imminent danger of becoming threatened throughout all or a significant portion of its range" (Jelks et al. 2008).

BLM_S (Bureau of Land Management Sensitive): "(1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All Federal candidate species, proposed species, and delisted species in the 5 years following delisting would be conserved as Bureau sensitive species." (CDFW 2022d);

CDF_S (California Department of Forestry and Fire Protection Sensitive): "those species that warrant special protection during timber operations" (CDFW 2022d);

CDFW_FP (CDFW Fully Protected Animal): "This classification was the State of California's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts." (CDFW 2022d);

CDFW_SSC (CDFW Species of Special Concern): "It is the goal and responsibility of the Department of Fish and Wildlife to maintain viable populations of all native species. To this end, the Department has designated certain vertebrate species as 'Species of Special Concern' because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as 'Species of Special Concern' is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long-term viability" (CDFW 2022d);

CDFW_WL (California Department of Fish and Wildlife Watch List): "The CDFW maintains a list consisting of taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status" (CDFW 2022d);

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur

IUCN_LC (International Union for Conservation of Nature Least Concern): “when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened” (IUCN 2012);

IUCN_NT (International Union for Conservation of Nature Near Threatened): “when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future (IUCN 2012);

IUCN_VU (International Union for Conservation of Nature Vulnerable): “when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable…, and it is therefore considered to be facing a high risk of extinction in the wild” (IUCN 2012);

IUCN_EN (International Union for Conservation of Nature Endangered): “when the best available evidence indicates that it meets any of the criteria A to E for Endangered…,and it is therefore considered to be facing a very high risk of extinction in the wild” (IUCN 2012);

MMC_SSC (Marine Mammal Commission Species of Special Concern): no definition available.

NABCI_RWL (North American Bird Conservation Initiative Red Watch List): “species with extremely high vulnerability” (CDFW 2022d);

NMFS_SC (National Marine Fisheries Service Species of Concern): “species about which NOAA's NMFS has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act” (CDFW 2022d);

USFS_S (U.S. Forest Service Sensitive): “plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density and/or significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution” (CDFW 2022d);

USFWS_BCC (U.S. Fish and Wildlife Service Birds of Conservation Concern): “The goal of the Birds of Conservation Concern 2008 report is to accurately identify the migratory and non-migratory bird species (beyond those already designated as Federally Threatened or Endangered) that represent our highest conservation priorities and draw attention to species in need of conservation action” (CDFW 2022d);

WBWG_H- (Western Bat Working Group High Priority): “those species considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment” (BCI 1998);

WBWG_LM- (Western Bat Working Group Low Priority): “most of the existing data support stable populations of the species, and that the potential for major changes in status in the near future is considered unlikely. While there may be localized concerns, the overall status of the species is believed to be secure” (BCI 1998);

WBWG_M- (Western Bat Working Group Medium Priority): “a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats” (BCI 1998);

XERCES_IM (Xerces Society Imperiled): species “at high risk of extinction because of highly restricted range, rare populations (often 20 or fewer), steep declines, or other factors” (NatureServe 2022).

Potential to Occur:

No Potential: Habitat in and adjacent to the Project Area is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Low Potential: 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 in the Project Area.

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 in the Project Area.

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 in the Project Area.

Present: Detected or documented on-site.

4. Potential Impacts to Special Status Wildlife and Proposed Avoidance and Minimization Measures

4.1.1 Special Status Mammals

Two special status mammals (Townsend’s Big-eared Bat and Long-eared Myotis) have a moderate potential to occur within or directly adjacent to the PSB. Townsend’s Big-eared Bat and Long-eared Myotis have been detected adjacent to the PSB (BAMVT 2022). To protect these special status mammals, the following measure is recommended for inclusion into environmental documentation to reduce potential impacts to special status mammals.

Measure BIO-1: Protect Special Status Bats

Removal of confirmed or presumed-occupied bat roost habitat would occur only during seasonal periods of bat activity (when bats are volant, i.e. able to leave roosts) between March 1 and April 15 or September 1 and October 15, when evening temps rise about 45 F, and when no rainfall greater than ½ inches has occurred in the last 24 hours.

If trees or structures cannot be removed during the volant period, i.e. Project activities occur during the bat maternity season which generally occur April 16th through August 30th, the City’s qualified biologist shall conduct surveys within suitable habitat for special status bats. Survey methodology shall include visual examination with binoculars and may optionally utilize ultrasonic detectors to determine if special status bat species utilize the vicinity.

Surveys shall be conducted by a qualified biologist within seven days prior to construction in any areas where potential maternity roosts may be disturbed/removed. The preconstruction surveys for bats may coincide with pre-construction surveys for other animals. Surveys shall include a visual inspection of the impact area and any large trees/snags with cavities or loose bark or crevices within infrastructure. If the presence of a maternity roost is confirmed, an appropriate buffer distance would be established in consultation with CDFW to ensure that construction noise would remain below disturbance thresholds for bats. If no bat utilization or roosts are found, then no further study or action is required. If bats are found to utilize the PSB, or presence is assumed, a bat specialist should be engaged to advise the best method to prevent impact.

Project-related lighting shall be minimized if any construction occurs at night, either contained within structures or limited by appropriate reflectors or shrouds and focused on areas needed for safety, security or other essential requirements.

4.1.2 Special Status, Migratory, and Nesting Birds

Ten special status birds (including one state endangered and one state threatened) were found to have a moderate or high potential to occur within the PSB, either for foraging or nesting, or both. If special status and/or native migratory birds are nesting in the PSB, or within 500 feet during construction activities, these species may be impacted by removal of nesting habitat, elevated levels of noise, and anthropogenic disturbance. To protect nesting special status birds, as well as native migratory bird species that are nesting, the following measure is recommended for inclusion into environmental documentation to reduce potential impacts to special status, migratory, and nesting birds.

Measure BIO-2: Protect Special Status, Migratory and Nesting Birds

Ground disturbance and vegetation clearing would be conducted, if possible, during the fall and/or winter months and outside of the avian nesting season (which is generally assumed to occur between March 15 – August 15) to avoid any direct effects to special-status and protected birds. If ground disturbance or vegetation clearing cannot be confined to the fall and/or winter outside of the nesting season, a qualified biologist would conduct pre-construction surveys within the vicinity of the PSB, to check for nesting activity of native birds and to evaluate the site for presence of raptors and special status bird species. The biologist would conduct at minimum a one-day pre-construction survey within the seven-day period prior to vegetation removal and ground-disturbing activities. If ground disturbance and vegetation removal work lapses for seven days or longer during the nesting season, a qualified biologist would conduct a supplemental avian pre-construction survey before Project work is reinitiated.

If active nests are detected within the construction footprint, or within 500 feet of construction activities, the biologist would flag a buffer around each nest. Construction activities would avoid nest sites until the biologist determines that the young have fledged or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers would be implemented as needed. In general, the buffer size for common species would be determined on a case-by-case basis in consultation with the CDFW and, if applicable, with USFWS. Buffer sizes would take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds.

If active nests are detected during the survey, the qualified biologist would monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified biologist, disturb nesting activities (e.g., excessive noise), would be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified biologist would immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors.

4.1.3 Special Status Amphibians

One special status amphibian (Northern Red-Legged Frog) has a moderate potential to occur within the PSB given the habitat quality and available data. The following measure is recommended for inclusion into environmental documentation to reduce potential impacts to the Northern Red-Legged Frog.

Measure BIO-3: Protect Northern Red-legged Frog

The Manila CSD would retain a qualified biologist to perform a pre-construction survey for the Northern Red-legged Frog within seven days prior to commencement of ground disturbance. The survey would be limited to the Project footprint and within 50 feet of suitable habitat. The biologist would relocate any specimens that occur within the work-impact zone to nearby suitable habitat. In the event that a Northern Red-legged Frog is observed in an active construction zone, the contractor would halt construction activities in the area and the frog would be moved to a safe location in similar habitat outside of the construction zone. Construction within areas of standing water would be limited to the period of the year between July 1 and October 30 to avoid disturbance to breeding frogs. After July 1, a qualified biologist would inspect any work areas containing surface water (not including puddles resulting from rainfall) to ensure tadpoles or metamorphosing frogs are not present. If they are present, the qualified biologist would implement a rescue and relocation operation to move any tadpoles or metamorphosing frogs to a safe location in nearby suitable habitat. Mitigation Measure BIO-3 requires practicable avoidance and protection measures for Northern Red-legged Frogs during construction, thereby reducing any potential impacts.

4.1.4 Special Status Reptiles

No special status reptiles have a moderate or high potential to occur within the PSB given the lack of suitable habitat. Therefore, no measures are proposed at this time to offset potential impacts because special status reptiles would not be impacted by the Project.

4.1.5 Special Status Fish

No special status fish have a moderate or high potential to occur within the PSB given the lack of suitable perennial aquatic habitat. Therefore, no measures are proposed at this time to offset potential impacts because these special status species are unlikely to be impacted by the Project. However, small portions of the PSB intersect with the Humboldt Bay, which is federally-designated Essential Fish Habitat for Groundfish, coastal pelagic species, Coho Salmon, and Chinook Salmon. More specifically, the portion of the PSB near the Manila Community Park is proposed to extend approximately 100 feet into the Humboldt Bay.

The PSB includes the shoreline margin of Humboldt Bay. This assessment assumes in-water work within Humboldt Bay would not occur, associated with planned culvert and drainage improvements near the shoreline. It is further assumed that fish relocation and dewatering would not be required. As a result, the potential for aquatic species to occur is avoided due to terrestrial habitat. The potential to impact and/or affect to special status aquatic species would be limited to indirect water quality impairments, which will be controlled with erosion control protocols during ground disturbance required under a Stormwater Pollution Prevention Plan (SWPPP). Additionally, temporary exclusion fencing should be installed along the shoreline near planned areas of ground disturbance to limit inadvertent disturbance near aquatic habitat. The temporary exclusion fencing should be shown in the final 100% construction planset. Equipment maintenance or refueling should not occur within 100 feet of the Humboldt Bay shoreline.

If it is determined that construction would require in-water work within the margins of Humboldt Bay, including the edge of the salt marsh shoreline, the potential for some aquatic species to occur would increase as noted in Table 1. Dewatering and fish relocation will be required to follow CDFW and NOAA Fisheries requirements, and consultation under Section 7 of the Endangered Species Act (ESA) and CESA would be required, in addition to environmental permits from jurisdictional resource agencies.

4.1.6 Special Status Insects

One special status insect (Western Bumble Bee) has a high potential to occur within the PSB based on an observation during the site visit. There are sparse areas foraging habitat (large areas of nectar plants) within the PSB. However, the Project will replace invasive vegetation with native vegetation within the bioswales along existing and proposed drainage paths, which would benefit the species (Xerces Society 2022). Typically, the species nests underground in abandoned rodent or other animal nests, but they have also been found aboveground among logs of railroad ties (Xerces Society 2022). If an occupied Western Bumble Bee nest is observed in an active construction zone, the contractor would halt construction activities surrounding the area. A biologist would observe the nest and a buffer would be established to protect the occupied nest.

5. Conclusion

Based on occurrence records, habitat availability, and the reconnaissance-level site visit, no federally-listed wildlife species are expected to occur within the PSB. One state-endangered (Bald Eagle) and one state-threatened (Bank Swallow) species have a moderate potential to occur within or nearby the PSB. Three special status mammals (Townsend’s Big-eared Bat, Long-eared Myotis, Humboldt Mountain Beaver) have a moderate potential to occur. The Townsend’s Big-eared Bat is considered sensitive by the Bureau of Land Management (BLM) and United States Forest Service (USFS), a species of special concern by CDFW, and a species of high priority by the Western Working Bat Group (WBWG). The Long-eared Myotis is considered sensitive by the BLM, and a species of medium priority by the WBWG. Eight special status birds, as well as native migratory birds, may forage or nest within the PSB or the surrounding 500 feet. This includes the Great Egret, which was observed during the site visit and is considered sensitive by the CDF. The Northern Red-legged Frog (a species of special concern by CDFW and sensitive by the USFS) and the Western Bumble Bee (sensitive by the USFS) have a moderate to high potential to occur. If work is to extend within the Humboldt Bay, the potential for special status fish species to be impacted will increase. With implementation of proposed avoidance and minimization measures, impacts would be avoided or reduced to less-than-significant levels.

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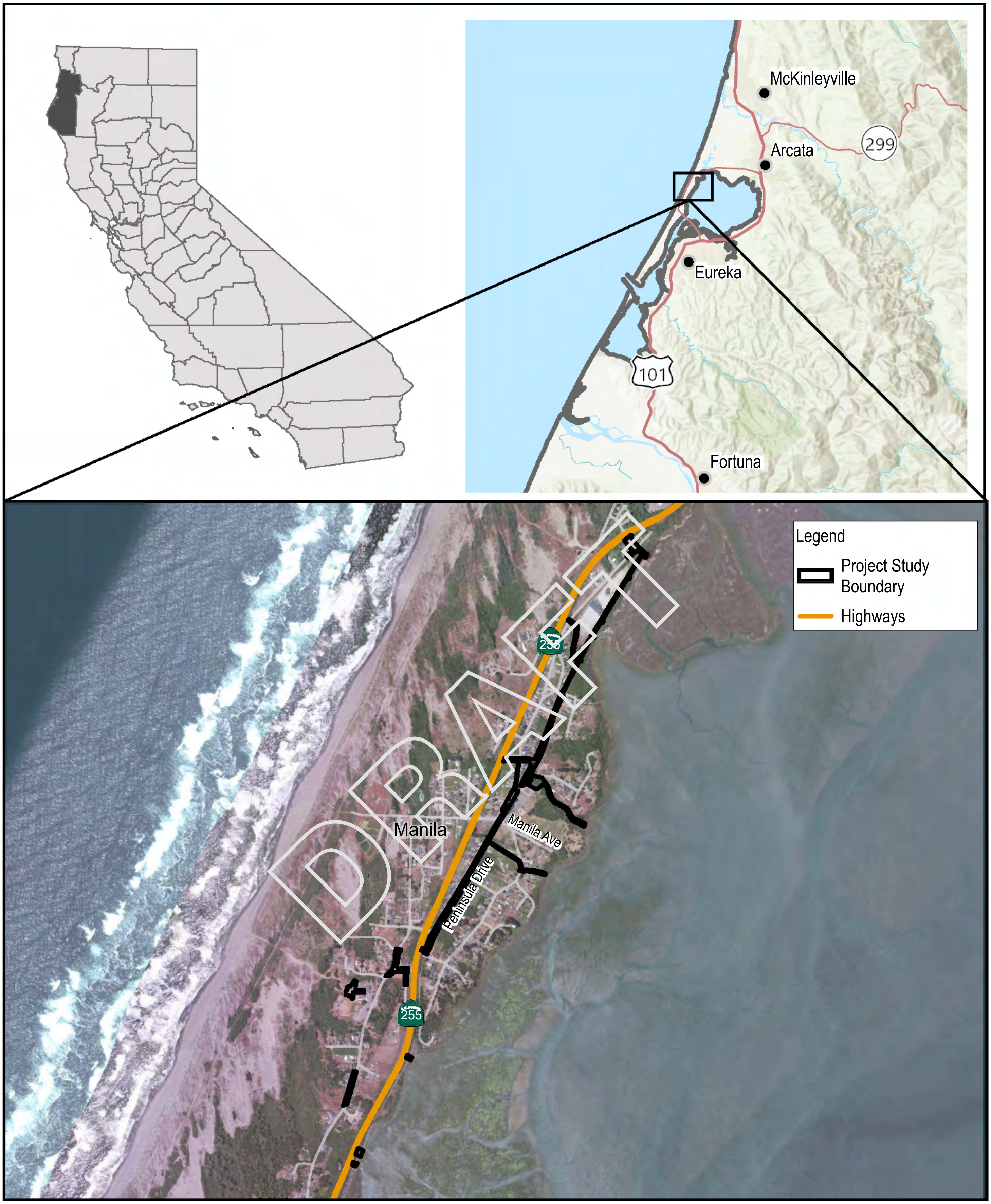
Appendices

Appendix A
Figures



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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No. **12572691**
Revision No. **-**
Date **Jun 2022**

Vicinity Map

FIGURE 1

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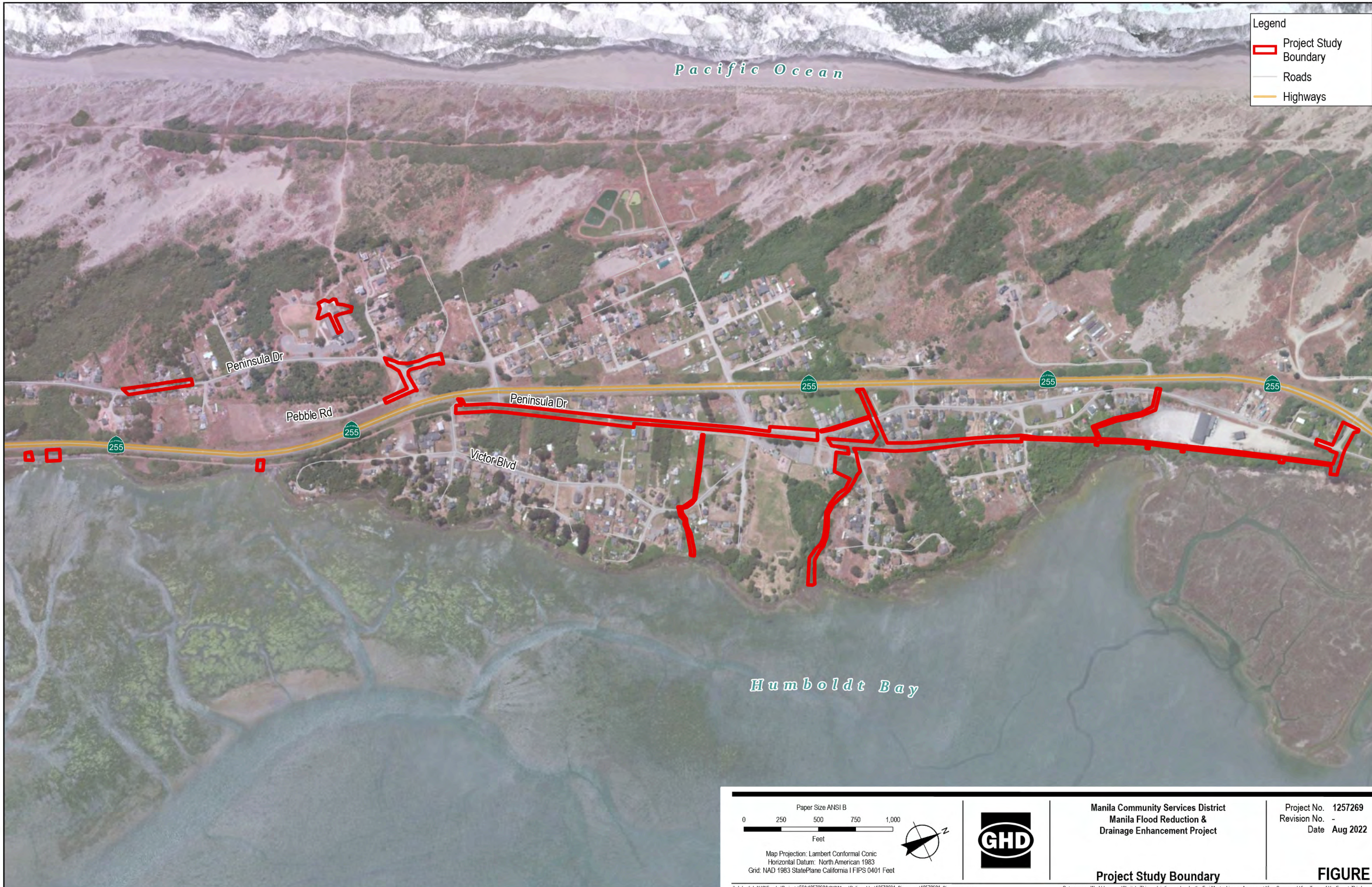

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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

Project No. 1257269
Revision No. -
Date Aug 2022

Project Study Boundary

FIGURE 2

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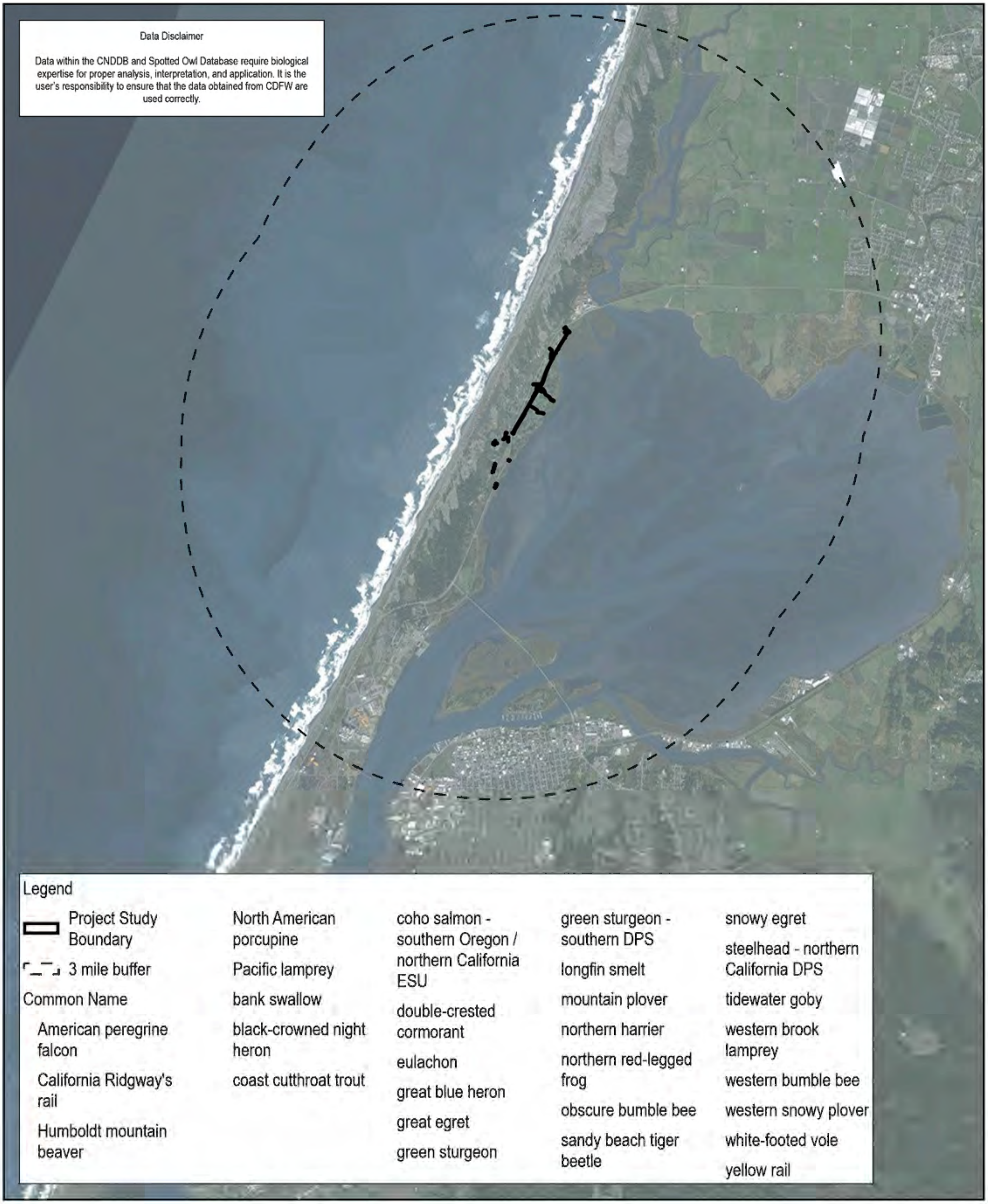

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Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

CNDDB Occurrences Within A 3 Mile Radius

Project No. **1257269**
Revision No. **-**
Date **Jun 2022**

FIGURE 3

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Data source: World Imagery (Clarity). This work is licensed under the Esri Master License Agreement View Summary | View Terms of UseExport: This layer is not intended to be used to export tiles for offline. Data Collection and Editing: This layer may be used in various ArcGIS apps to support data collection and editing, with the results used internally or shared with others, as described for these use cases , CNDDB. Created by: jlopez4

Appendix B

Database Searches (CNDDB, IPaC, EFH)

Scientific Name	Common Name	FESA	CESA	GRank	SRank	Other Status	Habitat	Taxon
Aplodontia rufa humboldtiana	Humboldt mountain beaver	None	None	G5TNR	SNR		Coastal scrub | Redwood | Riparian forestCoast Range in southwestern Del Norte County and northwestern Humboldt County.Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory.	Mammals
Arborimus albipes	white-footed vole	None	None	G3G4	S2	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	North coast coniferous forest | Redwood | Riparian forestMature coastal forests in Humboldt and Del Norte counties. Prefers areas near small, clear streams with dense alder and shrubs.Occupies the habitat from the ground surface to the canopy. Feeds in all layers and nests on the ground under logs or rock.	Mammals
Arborimus pomo	Sonoma tree vole	None	None	G3	S3	CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened	North coast coniferous forest | Oldgrowth | RedwoodNorth coast fog belt from Oregon border to Somona County. In Douglas-fir, redwood and montane hardwood-conifer forests.Feeds almost exclusively on Douglas-fir needles. Will occasionaly take needles of grand fir, hemlock or spruce.	Mammals
Corynorhinus townsendii	Townsend's big-eared bat	None	None	G4	S2	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree woodland | Lower montane coniferous forest | Meadow & seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub | Sonoran thorn woodland | Upper montane coniferous forest | Valley & foothill grasslandThroughout California in a wide variety of habitats. Most common in mesic sites.Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Mammals
Erethizon dorsatum	North American porcupine	None	None	G5	S3	IUCN_LC-Least Concern	Broadleaved upland forest | Cismontane woodland | Closed-cone coniferous forest | Lower montane coniferous forest | North coast coniferous forest | Upper montane coniferous forestForested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges.Wide variety of coniferous and mixed woodland habitat.	Mammals

Martes caurina humboldtensis	Humboldt marten	Threatened	Endangered	G4G5T1	S1	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	North coast coniferous forest | Oldgrowth | RedwoodOccurs only in the coastal redwood zone from the Oregon border south to Sonoma County.Associated with late-successional coniferous forests, prefer forests with low, overhead cover.	Mammals
Myotis evotis	long-eared myotis	None	None	G5	S3	BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands and forests.Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.	Mammals
Pekania pennanti	Fisher	None	None	G5	S2S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	North coast coniferous forest | Oldgrowth | Riparian forestIntermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure.Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	Mammals
Accipiter striatus	sharp-shinned hawk	None	None	G5	S4	CDFW_WL-Watch List | IUCN_LC-Least Concern	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodlandPonderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas.North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.	Birds
Ardea alba	great egret	None	None	G5	S4	CDF_S-Sensitive | IUCN_LC-Least Concern	Brackish marsh | Estuary | Freshwater marsh | Marsh & swamp | Riparian forest | WetlandColonial nester in large trees.Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Birds
Ardea herodias	great blue heron	None	None	G5	S4	CDF_S-Sensitive | IUCN_LC-Least Concern	Brackish marsh | Estuary | Freshwater marsh | Marsh & swamp | Riparian forest | WetlandColonial nester in tall trees, cliffsides, and sequestered spots on marshes.Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Birds

Brachyramphus marmoratus	marbled murrelet	Threatened	Endangered	G3	S2	CDF_S-Sensitive | IUCN_EN-Endangered | NABCI_RWL-Red Watch List	Lower montane coniferous forest | Oldgrowth | RedwoodFeeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz.Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	Birds
Charadrius montanus	mountain plover	None	None	G3	S2S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened | NABCI_RWL-Red Watch List | USFWS_BCC-Birds of Conservation Concern	Chenopod scrub | Valley & foothill grasslandShort grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms.Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	Birds
Charadrius nivosus nivosus	western snowy plover	Threatened	None	G3T3	S2	CDFW_SSC-Species of Special Concern | NABCI_RWL-Red Watch List	Great Basin standing waters | Sand shore | WetlandSandy beaches, salt pond levees and shores of large alkali lakes.Needs sandy, gravelly or friable soils for nesting.	Birds
Circus hudsonius	northern harrier	None	None	G5	S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Coastal scrub | Great Basin grassland | Marsh & swamp | Riparian scrub | Valley & foothill grassland | WetlandCoastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas.Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Birds

Coturnicops noveboracensis	yellow rail	None	None	G4	S1S2	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | NABCI_RWL-Red Watch List | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Freshwater marsh | Meadow & seepSummer resident in eastern Sierra Nevada in Mono County.Freshwater marshlands.	Birds
Egretta thula	snowy egret	None	None	G5	S4	IUCN_LC-Least Concern	Marsh & swamp | Meadow & seep | Riparian forest | Riparian woodland | WetlandColonial nester, with nest sites situated in protected beds of dense tules.Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Birds
Elanus leucurus	white-tailed kite	None	None	G5	S3S4	BLM_S-Sensitive | CDFW_FP-Fully Protected | IUCN_LC-Least Concern	Cismontane woodland | Marsh & swamp | Riparian woodland | Valley & foothill grassland | WetlandRolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Birds
Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	G5	S3	BLM_S-Sensitive | CDF_S-Sensitive | CDFW_FP-Fully Protected | IUCN_LC-Least Concern | USFS_S-Sensitive	Lower montane coniferous forest | OldgrowthOcean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water.Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Birds
Nannopterum auritum	double-crested cormorant	None	None	G5	S4	CDFW_WL-Watch List | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodlandColonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state.Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Birds

Nycticorax nycticorax	black-crowned night heron	None	None	G5	S4	IUCN_LC-Least Concern	Marsh & swamp | Riparian forest | Riparian woodland | WetlandColonial nester, usually in trees, occasionally in tule patches.Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Birds
Pandion haliaetus	osprey	None	None	G5	S4	CDF_S-Sensitive | CDFW_WL-Watch List | IUCN_LC-Least Concern	Riparian forestOcean shore, bays, freshwater lakes, and larger streams.Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Birds
Rallus obsoletus obsoletus	California Ridgway's rail	Endangered	Endangered	G3T1	S1	CDFW_FP-Fully Protected | NABCI_RWL-Red Watch List	Brackish marsh | Marsh & swamp | Salt marsh | WetlandSalt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	Birds
Riparia riparia	bank swallow	None	Threatened	G5	S2	BLM_S-Sensitive | IUCN_LC-Least Concern	Riparian scrub | Riparian woodlandColonial nester; nests primarily in riparian and other lowland habitats west of the desert.Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Birds
Emys marmorata	western pond turtle	None	None	G3G4	S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable | USFS_S-Sensitive	Aquatic | Artificial flowing waters | Klamath/North coast flowing waters | Klamath/North coast standing waters | Marsh & swamp | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | WetlandA thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Reptiles
Ascaphus truei	Pacific tailed frog	None	None	G4	S3S4	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Aquatic | Klamath/North coast flowing waters | Lower montane coniferous forest | North coast coniferous forest | Redwood | Riparian forestOccurs in montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine habitats.Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.	Amphibians

Rana aurora	northern red-legged frog	None	None	G4	S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Klamath/North coast flowing waters | Riparian forest | Riparian woodlandHumid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover.Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	Amphibians
Rana boylii	foothill yellow-legged frog	None	Endangered	G3	S3	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened | USFS_S-Sensitive	Aquatic | Chaparral | Cismontane woodland | Coastal scrub | Klamath/North coast flowing waters | Lower montane coniferous forest | Meadow & seep | Riparian forest | Riparian woodland | Sacramento/San Joaquin flowing watersPartly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Amphibians
Rhyacotriton variegatus	southern torrent salamander	None	None	G3G4	S2S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Lower montane coniferous forest | Oldgrowth | Redwood | Riparian forestCoastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest.Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water.	Amphibians
Acipenser medirostris	green sturgeon	None	None	G3	S1	AFS_VU-Vulnerable | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Aquatic | Klamath/North coast flowing waters | Sacramento/San Joaquin flowing watersThese are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity Rivers.Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Fish
Entosphenus tridentatus	Pacific lamprey	None	None	G4	S3	AFS_VU-Vulnerable | BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Aquatic | Klamath/North coast flowing waters | Sacramento/San Joaquin flowing waters | South coast flowing watersFound in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining.Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	Fish

Eucyclogobius newberryi	tidewater goby	Endangered	None	G3	S3	AFS_EN-Endangered | IUCN_VU-Vulnerable	Aquatic | Klamath/North coast flowing waters | Sacramento/San Joaquin flowing waters | South coast flowing watersBrackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River.Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Fish
Lampetra richardsoni	western brook lamprey	None	None	G4G5	S3S4	CDFW_SSC-Species of Special Concern | USFS_S-Sensitive		Fish
Oncorhynchus clarkii clarkii	coast cutthroat trout	None	None	G5T4	S3	AFS_VU-Vulnerable | CDFW_SSC-Species of Special Concern | USFS_S-Sensitive	Aquatic | Klamath/North coast flowing watersSmall coastal streams from the Eel River to the Oregon border.Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning.	Fish
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	G5T2Q	S2	AFS_TH-Threatened	Aquatic | Klamath/North coast flowing waters | Sacramento/San Joaquin flowing watersFederal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California.State listing refers to populations between the Oregon border and Punta Gorda, California.	Fish
Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	Threatened	None	G5T2T3Q	S2S3	AFS_TH-Threatened	Aquatic | Sacramento/San Joaquin flowing watersCoastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead.	Fish
Spirinchus thaleichthys	longfin smelt	Candidate	Threatened	G5	S1		Aquatic | EstuaryEuryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	Fish
Thaleichthys pacificus	eulachon	Threatened	None	G5	S2		Aquatic | Klamath/North coast flowing watersFound in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries.Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	Fish

Anodonta californiensis	California floater	None	None	G3Q	S2?	USFS_S-Sensitive	AquaticFreshwater lakes and slow-moving streams and rivers. Taxonomy under review by specialists.Generally in shallow water.	Mollusks
Margaritifera falcata	western pearlshell	None	None	G4G5	S1S2		AquaticAquatic.Prefers lower velocity waters.	Mollusks
Bombus caliginosus	obscure bumble bee	None	None	G2G3	S1S2	IUCN_VU-Vulnerable	Coastal areas from Santa Barbara County to north to Washington state.Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	Insects
Bombus crotchii	Crotch bumble bee	None	None	G2	S1S2		Coastal California east to the Sierra-Cascade crest and south into Mexico.Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	Insects
Bombus occidentalis	western bumble bee	None	None	G2G3	S1	USFS_S-Sensitive	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Insects
Cicindela hirticollis gravida	sandy beach tiger beetle	None	None	G5T2	S2		Coastal dunesInhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico.Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	Insects
Scaphinotus behrensi	Behrens' snail-eating beetle	None	None	G2G4	S2S4		North coast coniferous forestFound in extreme NW CA along the coast.	Insects

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
Phone: (707) 822-7201 Fax: (707) 822-8411

In Reply Refer To: July 06, 2022
Project Code: 2022-0060814
Project Name: Manila Drainage Project

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

To Whom It May Concern:

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

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

Project Summary

Project Code: 2022-0060814
Event Code: None
Project Name: Manila Drainage Project
Project Type: Drainage Project
Project Description: The Project, led by the Manila CSD, will incorporate multi-objective, multi-benefit project components that address flood reduction, ecosystem services, and resiliency to sea level rise and climate change.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.850741600000006,-124.16146390263467,14z

Counties: Humboldt County, California

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Pacific Marten, Coastal Distinct Population Segment *Martes caurina* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/9081	Threatened

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Fishes

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Beach Layia *Layia carnosa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6728	Threatened
Menzies' Wallflower *Erysimum menziesii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2935	Endangered
Western Lily *Lilium occidentale* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/998	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird *Selasphorus sasin* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Sep 30

NAME	BREEDING SEASON
Black Oystercatcher *Haematopus bachmani* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31
Black Swift *Cypseloides niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black Turnstone *Arenaria melanocephala* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Cassin's Finch *Carpodacus cassinii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31

NAME	BREEDING SEASON
Rufous Hummingbird *selasphorus rufus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds Jun 1 to Aug 10
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit *Chamaea fasciata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

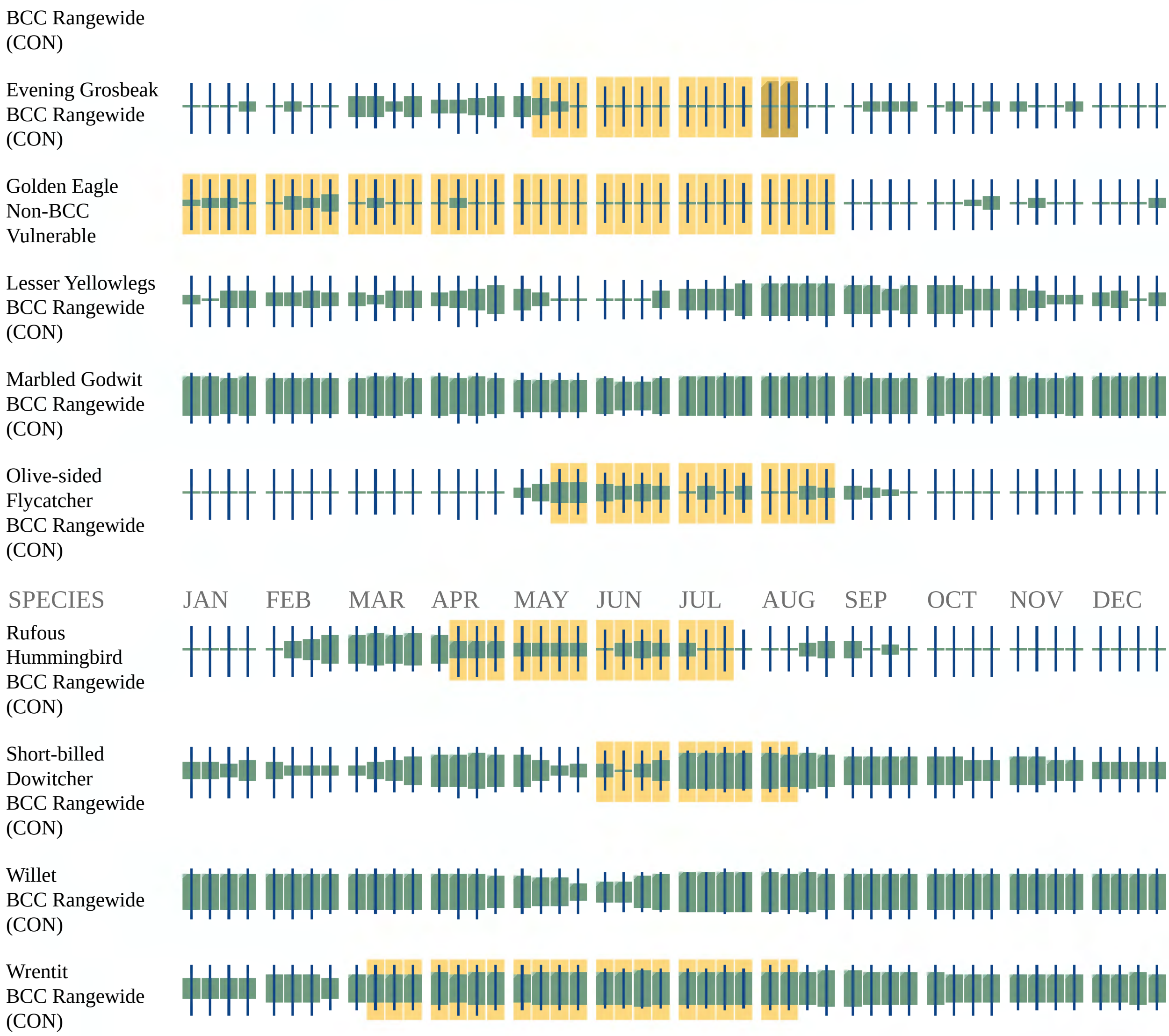
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPaC User Contact Information

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EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office
Alaska Regional Office

Query Results

Degrees, Minutes, Seconds: Latitude = 40º 51' 2" N, Longitude = 125º 50' 11" W
Decimal Degrees: Latitude = 40.851, Longitude = -124.164

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

EFH

No Essential Fish Habitats (EFH) were identified at the report location.

Salmon EFH

Link	HUC Name	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
	Mad-Redwood - Below	Chinook Salmon, Coho Salmon	All	Pacific	Pacific Coast Salmon Plan

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Pacific Coastal Pelagic Species, Jack Mackerel, Pacific (Chub) Mackerel, Pacific Sardine, Northern Anchovy - Central Subpopulation, Northern Anchovy - Northern Subpopulation, **Pacific Highly Migratory Species**, Bigeye Thresher Shark - North Pacific, Bluefin Tuna - Pacific, Dolphinfish (Dorado or Mahimahi) - Pacific, Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific

Appendix C

Site Visit Photographs

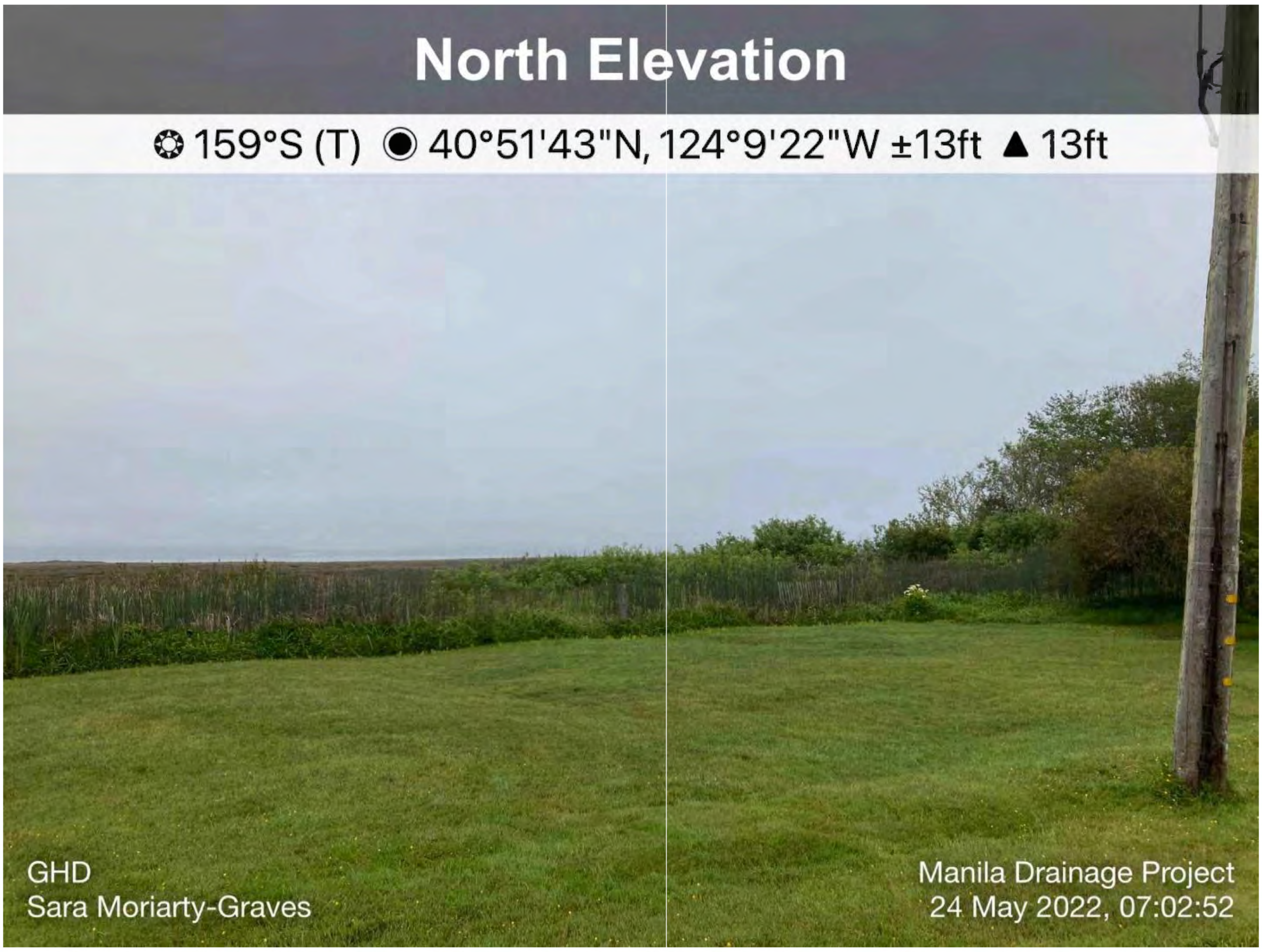

Photo C-1. View of the vegetation around Humboldt Bay from the northernmost portion of the PSB on Peninsula Drive, facing south.

Photo C-2. View of existing tree and shrub vegetation at the intersection of the PSB with Sandy Road, facing east.

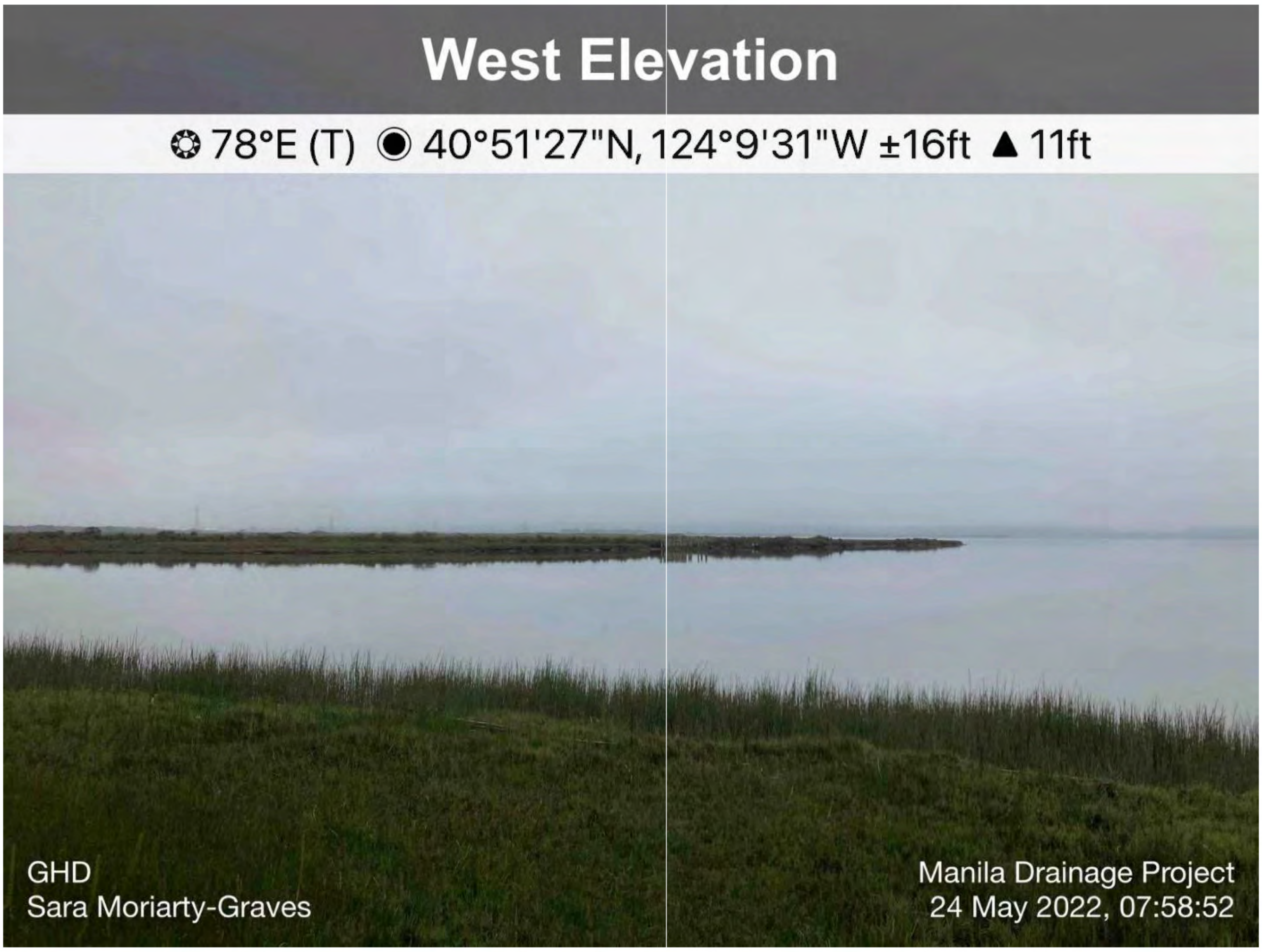

Photo C-3. View of Humboldt Bay from near the Northwestern Pacific railroad tracks in the northern section of the PSB, facing east.

Photo C-4. Aquatic habitat in Humboldt Bay, directly adjacent to the Northwestern Pacific railroad tracks in the northern section of the PSB (within 100 feet), facing northeast.

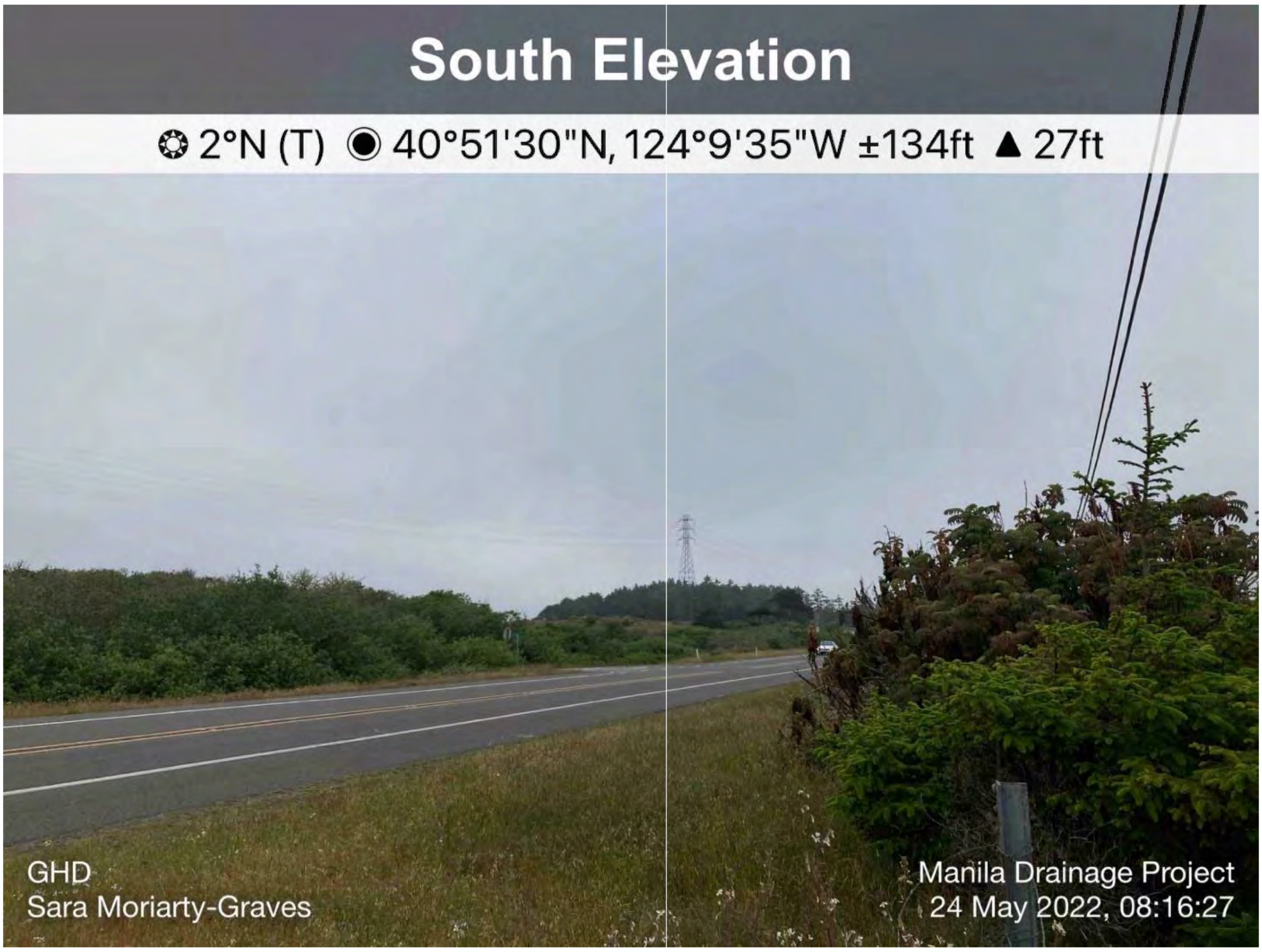

Photo C-5. State Route 255, which intersects with portions of the PSB, facing north.

Photo C-6. View of roadside ditch with water and aquatic vegetation on Peninsula Drive, ~200 feet south of the intersection with Smigle Road.

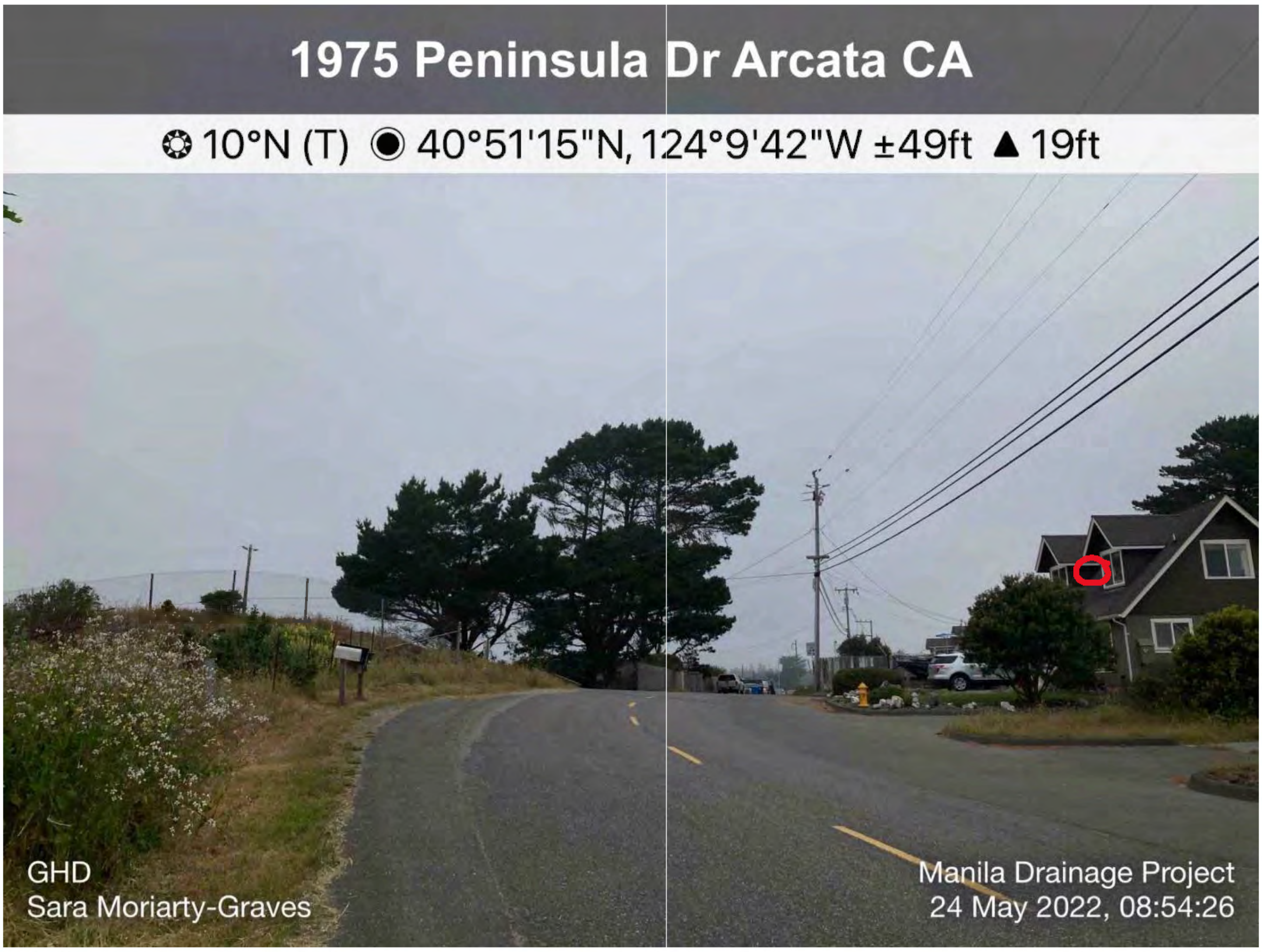

Photo C-7. View of house with active Violet-green Swallow nest (circled in red) on Peninsula Drive within 100 feet of the PSB, ~200 feet south of the intersection with Smigle Road, facing north.

Photo C-8. View of the roadside vegetation in the PSB on Mill Street, facing northeast.

Photo C-9. Understory and canopy structure in a portion of the PSB, north of the Manila Community Park, facing east.

Photo C-10. View of roadside water and vegetation within the PSB on Victor Boulevard.

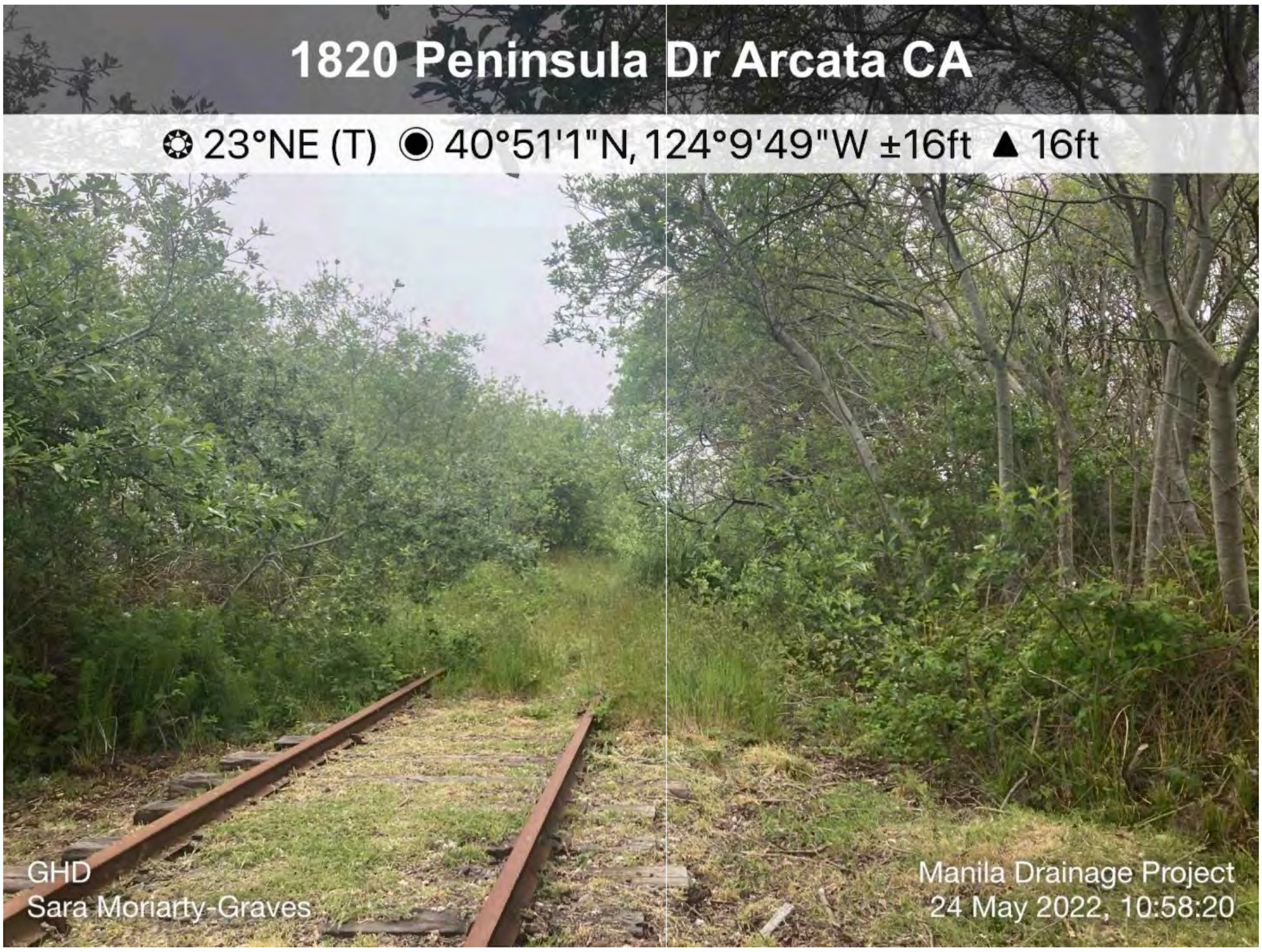

Photo C-11. View of commonly seen deciduous tree, shrub, and grass vegetation structure along the Northwestern Pacific railroad tracks adjacent to Peninsula Drive.

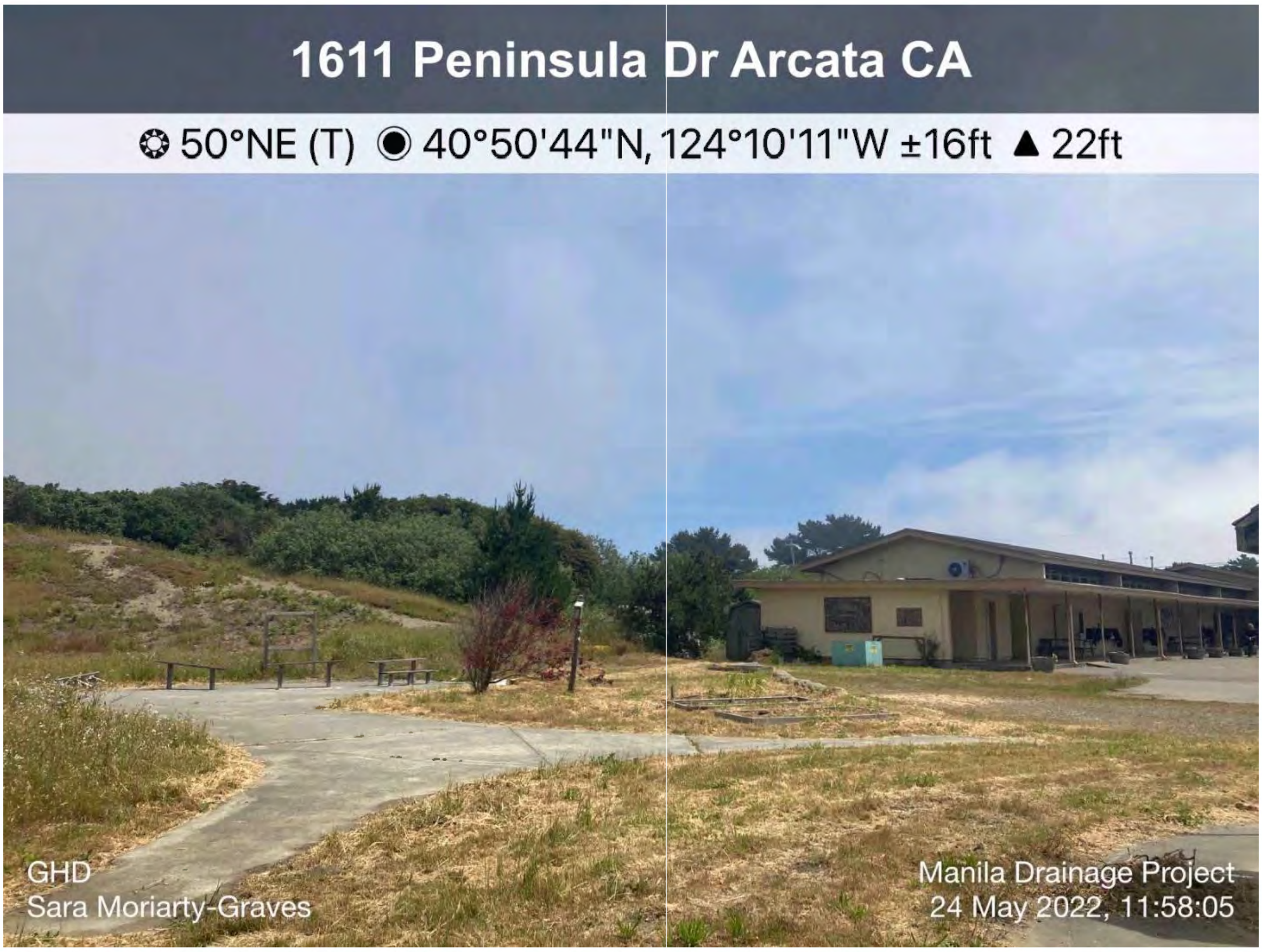

Photo C-12. View of the Redwood Coast Montessori school, a section of the PSB to the west of State Route 255 and Peninsula Drive, facing northeast.

Photo C-13. View of Pebble Lane, State Route 255, and mature trees adjacent to the roads, facing south.

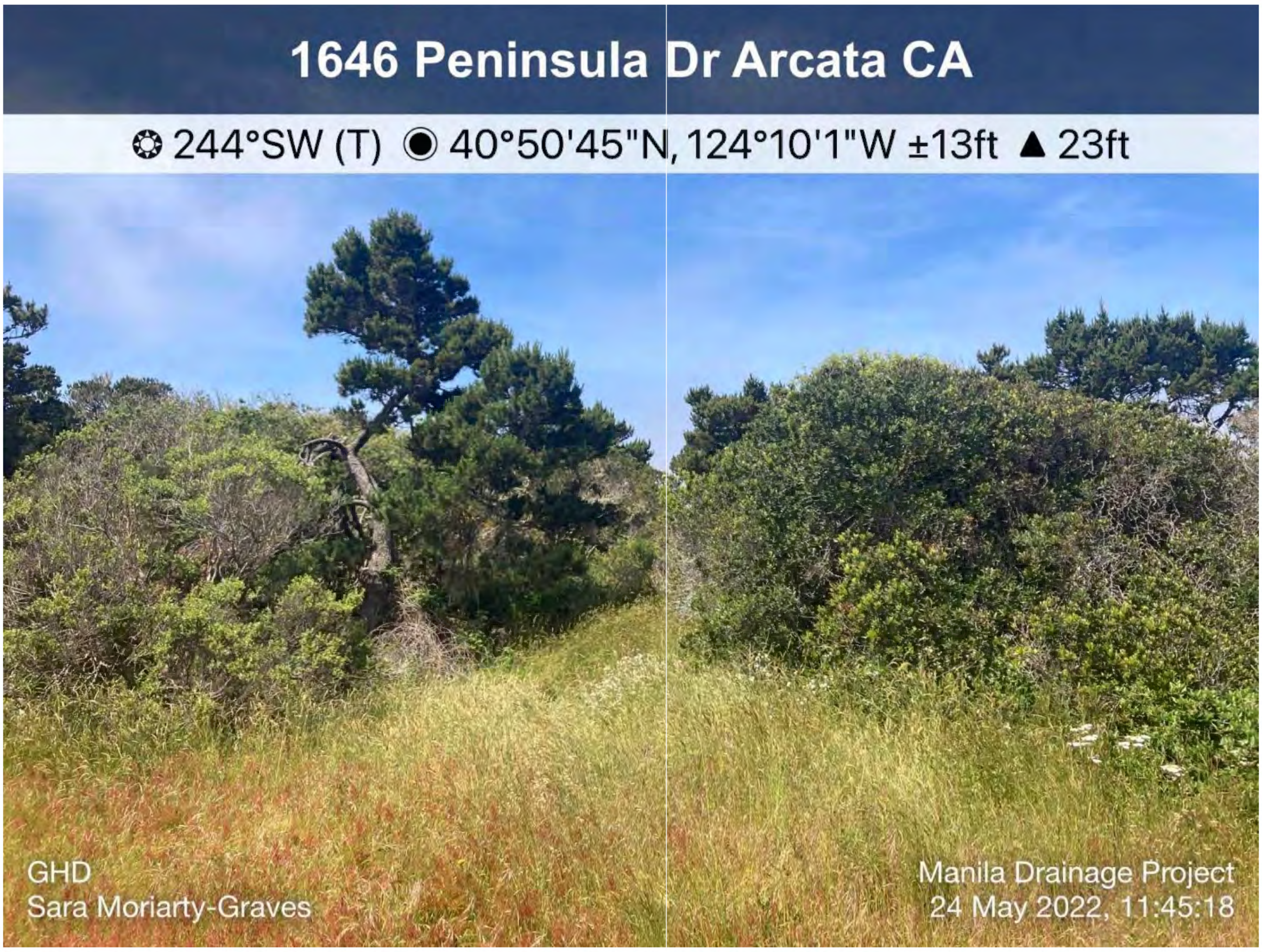

Photo C-14. View of grass, shrub, and tree vegetation near the intersection of Pebble Road and Peninsula Drive.

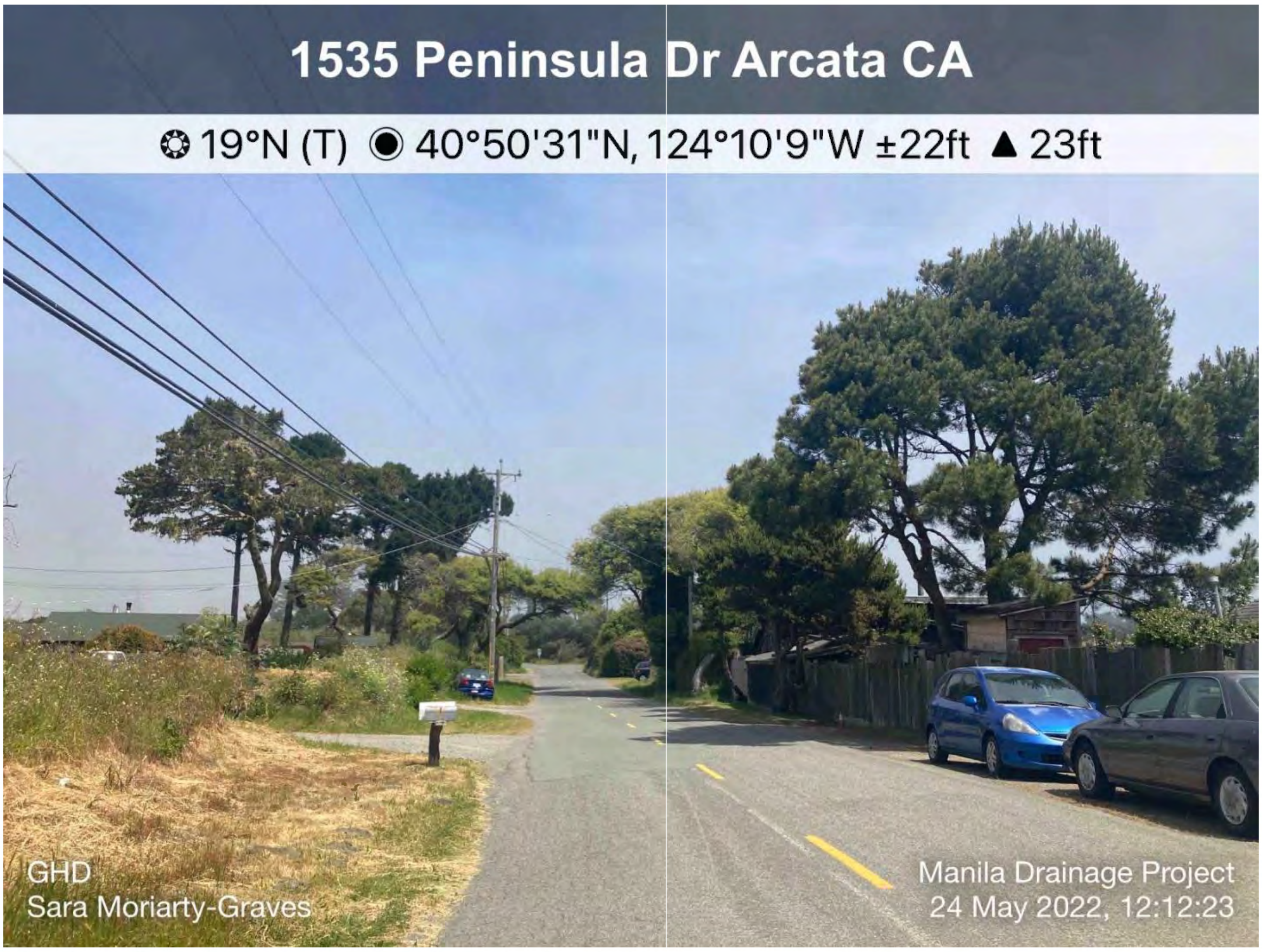

Photo C-15. View of mature pine trees along the southern end of Peninsula Drive in the PSB, facing north.

Photo C-16. View of one of the small subsections of the PSB off State Route 255, overlooking Humboldt Bay, facing southeast.

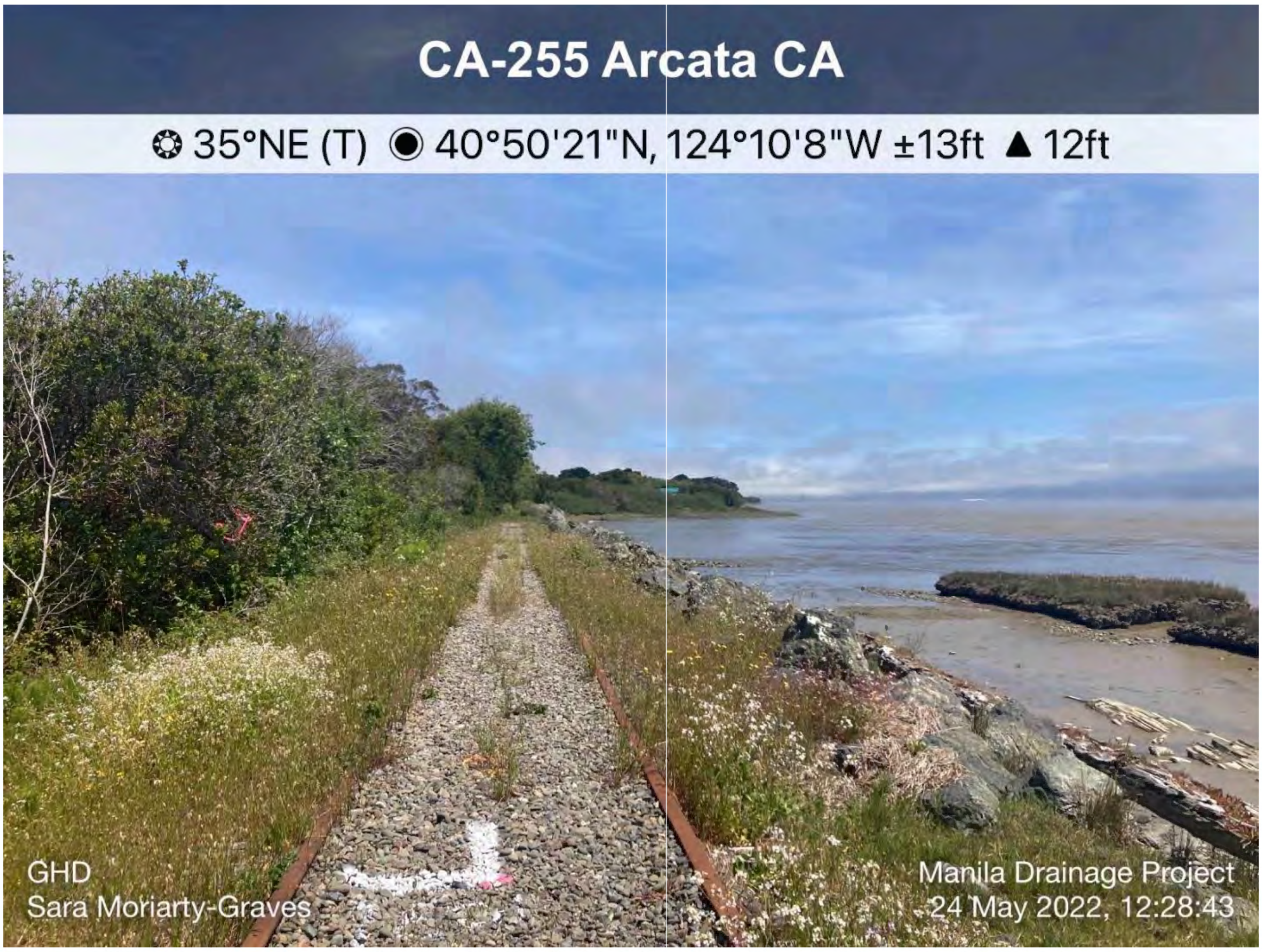

Photo C-17. View of one of the small subsections in the southernmost portion of the PSB, with Northwestern Pacific railroad tracks, Humboldt Bay shoreline habitat, facing northeast.

Appendix D

On-site Species Lists

Table D1 Terrestrial Wildlife Observed On-site

Scientific Name	Common Name	Observation Type	Special Status
Bombus occidentalis	Western Bumble Bee	Observed	USFS Sensitive
Felis cattus	Feral Cat	Observed	None; invasive

Table D2 List of avian breeding codes, associated bird behavior, and breeding status (the highest ranking code was recorded for each species during the survey)

Breeding Rank	Breeding Code	Description	Breeding Status
1	N	Active nest	Breeding
2	M	Carrying nesting material	Breeding
3	F	Carrying food or fecal sac	Breeding
4	D	Distraction display/feigning	Breeding
5	L	Local young fed by parents	Breeding
6	Y	Local young incapable of sustained flight	Breeding
7	C	Copulation or courtship observed	Breeding
8	T	Territorial behavior	Unconfirmed
9	S	Territorial song or drumming heard	Unconfirmed
10	E	Encountered in study area	Unconfirmed
11	O	Encountered flying over the study area	Unconfirmed

Table D3 Avian Species Detected On-site

Alpha Code	Common Name	Latin Name	Highest Breeding Status	Breeding Code	Special Status
MALL	Mallard	*Anas platyrhynchos*	Encountered in study area	E	FGC, MBTA
GREG	Great Egret	*Ardea alba*	Encountered flying over study area	O	CDF Sensitive, FGC, MTBA
ANHU	Anna's Hummingbird	*Calypte anna*	Encountered in study area	E	FGC, MTBA
WIWA	Wilson's Warbler	*Cardellina pusilla*	Encountered in the study area	E	FGC, MTBA
SWTH	Swainson's thrush	*Catharus ustulatus*	Territorial song or drumming heard	S	FGC, MTBA
WREN	Wrentit	*Chamaea fasciata*	Territorial song or drumming heard	S	FGC, MTBA
AMCR	American Crow	*Corvus brachyrhynchos*	Encountered in the study area	E	FGC, MTBA
CORA	Common Raven	*Corvus corax*	Encountered in study area	E	FGC, MTBA
PSFL	Pacific-slope Flycatcher	*Empidonax difficilis*	Territorial song or drumming heard	S	FGC, MTBA
HOFI	House Finch	*Haemorhous mexicanus*	Territorial behavior	T	FGC, MTBA

Alpha Code	Common Name	Latin Name	Highest Breeding Status	Breeding Code	Special Status
PUFI	Purple Finch	*Haemorhous purpureus*	Territorial behavior	T	FGC, MTBA
BARS	Barn Swallow	*Hirundo rustica*	Territorial behavior	T	FGC, MTBA
NA	Gull	*Larus sp.*	Encountered in study area	E	FGC, MTBA
SOSP	Song Sparrow	*Melospiza melodia*	Carrying nesting material	M	FGC, MTBA
BHCO	Brown-headed Cowbird	*Molothrus ater*	Encountered in study area	E	None; invasive
WHIM	Whimbrel	*Numenius phaeopus*	Encountered in the study area	S	FGC, MTBA
HOSP	House Sparrow	*Passer domesticus*	Carrying nesting material	M	None; invasive
DOWO	Downy Woodpecker	*Picoides pubescens*	Territorial song or drumming heard	S	FGC, MTBA
CBCH	Chestnut-backed Chickadee	*Poecile rufescens*	Territorial behavior	T	FGC, MTBA
BLPH	Black Phoebe	*Sayornis nigricans*	Territorial song or drumming heard	S	FGC, MTBA
AMGO	American Goldfinch	*Spinus tristis*	Territorial behavior	T	FGC, MTBA
EUCD	Eurasian Collared-Dove	*Streptopelia decaocto*	Territorial song or drumming heard	S	None; invasive
VGSW	Violet-green Swallow	*Tachycineta thalassina*	Active nest	N	FGC, MTBA
GRYE	Greater Yellowlegs	*Tringa melanoleuca*	Encountered in the study area	E	FGC, MTBA
AMRO	American Robin	*Turdus migratorius*	Territorial behavior	T	FGC, MTBA
GCSP	Golden-crowned Sparrow	*Zonotrichia atricapilla*	Encountered in study area	E	FGC, MTBA
WCSP	White-crowned Sparrow	*Zonotrichia leucophrys*	Encountered in study area	E	FGC, MTBA
Definitions: FGC = protected by California Fish and Game Code MBTA = protected by the federal Migratory Bird Treaty Act					

Appendix F

Mitigation, Monitoring, and Reporting Program

Mitigation Monitoring and Reporting Program

Manila Community Services District - Manila Community Services District Flood Reduction and Drainage Enhancement Project

SCH No. To be assigned

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
EPA 1 – Stormwater Pollution Prevention Plan (SWPPP) The Project will obtain coverage under State Water Resources Control Board (Water Board) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities. The Project will submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the Water Board. The SWPPP will address pollutant sources, best management practices, and other requirements specified in the Order. The SWPPP will include erosion and sediment control measures, and dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner will oversee implementation of the Project SWPPP, including visual inspections, sampling, and analysis, and ensuring overall compliance.	Manila CSD's contractor, to be verified by a SWPPP practitioner	Performance criteria – North Coast Regional Water Quality Control Board and County standards Reporting actions – As required by the state permit Schedule - During project construction activities, including work and non-work times	
Air Quality			
MM AQ-1: BMPs to Reduce Air Pollution The contractor shall implement the following measures during construction: – All exposed surfaces (e.g., staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered two times per day or as required by site conditions and current weather patterns. – All visible mud or dirt track-out onto adjacent public roads shall be removed using street sweepers at least once per day, or as needed to alleviate dust and debris on the roadway. – All vehicle speeds on unpaved roads shall be limited to 15 miles per hour, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures. – All areas to be paved shall be completed as soon as possible. – Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes.	Manila CSD and Manila CSD's contractor	Performance criteria – North Coast Unified Air Quality Management District standards Reporting actions – Verify requirements are included in final plans and specifications Schedule – During construction, check jobsite compliance as necessary	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
– All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications.			
Biological Resources			
MM BIO-1: Protect Special Status Plants Avoidance and minimization measures for special status plant species are addressed collectively for all species. The following measures are recommended: – The locations of any special status plant populations mapped herein shall be clearly identified in the contract documents (100% design plans and final specifications) if they occur within or adjacent to the grading boundary. – If special status plant populations are detected where construction will have unavoidable impacts, seed will be collected prior to construction by a qualified botanist and redistributed following construction during the appropriate season. On-site seed collection from the impacted species will be prioritized. If on-site seed collection is infeasible due to blooming period conflicts with the planned construction season, off-site seed collection will occur from a suitable nearby area.	Manila CSD and Manila CSD's biologist and contractor	Performance criteria – California Department of Fish and Wildlife (CDFW) standards	
MM BIO-2: Protect Special Status Bats Removal of confirmed or presumed-occupied bat roost habitat will occur only during seasonal periods of bat activity (when bats are volant, i.e., able to leave roosts) between March 1 and April 15 or September 1 and October 15, when evening temps rise above 45 F, and when no rainfall greater than ½ inches has occurred in the last 24 hours. If trees or structures cannot be removed during the volant period, i.e., Project activities occur during the bat maternity season which generally occur April 16th through August 30th, the Manila CSD's qualified biologist shall conduct surveys within suitable habitat for special status bats. Survey methodology shall include visual examination with binoculars and may optionally utilize ultrasonic detectors to determine if special status bat species utilize the vicinity. Surveys shall be conducted by a qualified biologist within seven days prior to construction in any areas where potential maternity roosts may be disturbed/removed. The preconstruction surveys for bats may coincide with pre-construction surveys for other animals. Surveys shall include a visual inspection of the impact area and any large trees/snags with cavities or loose bark or crevices within infrastructure. If the presence of a maternity roost is confirmed, an appropriate buffer distance will be established in consultation with CDFW to ensure that construction noise will remain below disturbance thresholds for bats. If no bat utilization or roosts are found, then no further study or action is required. If bats are	Manila CSD and Manila CSD's biologist and contractor	Performance criteria – California Department of Fish and Wildlife (CDFW) standards Reporting actions – Verify that protection and avoidance measures are in final specifications; verify completion and documentation of surveys, if necessary Schedule – Pre-construction and during construction; verify applicable disturbance buffers and protection measures are implemented	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
found to utilize the BSA, or presence is assumed, a bat specialist should be engaged to advise the best method to prevent impact. Project-related lighting shall be minimized if any construction occurs at night, either contained within structures or limited by appropriate reflectors or shrouds and focused on areas needed for safety, security or other essential requirements.			
MM BIO-3: Protect Special Status, Migratory, and Nesting Birds Ground disturbance and vegetation clearing will be conducted, where feasible, during the fall and/or winter months and outside of the avian nesting season (which is generally assumed to occur between March 15 – August 15) to avoid any direct effects to special-status and protected birds. Ground disturbance and vegetation clearing that cannot be confined to the fall and/or winter outside of the nesting season, will require that a qualified biologist conduct pre-construction surveys within the vicinity of the BSA, to check for nesting activity of native birds and to evaluate the site for presence of raptors and special status bird species. The biologist will conduct at minimum a one-day pre-construction survey within the seven-day period prior to vegetation removal and ground-disturbing activities. If ground disturbance and vegetation removal work lapses for seven days or longer during the nesting season, a qualified biologist will conduct a supplemental avian pre-construction survey before Project work is reinitiated. If active nests are detected within the construction footprint, or within 500 feet of construction activities, the biologist will flag a buffer around each nest. Construction activities will avoid nest sites until the biologist determines that the young have fledged, or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers will be implemented as needed. In general, the buffer size for common species will be determined on a case-by-case basis in consultation with the CDFW and, if applicable, with USFWS. Buffer sizes will take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds. If active nests are detected during the survey, the qualified biologist will monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified biologist, disturb nesting activities (e.g., excessive noise), will be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified biologist will immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting	Manila CSD and Manila CSD's biologist and contractor	Performance criteria – California Department of Fish and Wildlife (CDFW) standards Reporting actions – Verify that protection and avoidance measures are in final specifications; verify completion and documentation of surveys, if necessary Schedule – Pre-construction and during construction; verify applicable disturbance buffers and protection measures are implemented	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise sensitive receptors.			
MM BIO-4: Protect Northern Red-legged Frogs The Manila CSD will retain a qualified biologist to perform a pre-construction survey for the Northern Red-legged Frog within seven days prior to commencement of ground disturbance. The survey will be limited to the Project footprint and within 50 feet of suitable habitat. The biologist will relocate any specimens that occur within the work-impact zone to nearby suitable habitat. If a Northern Red-legged Frog is observed in an active construction zone, the contractor will halt construction activities in the area and the frog will be moved to a safe location in similar habitat outside of the construction zone. Construction within areas of standing water will be limited to the period of the year between July 1 and October 30 to avoid disturbance to breeding frogs. After July 1, a qualified biologist will inspect any work areas containing surface water (not including puddles resulting from rainfall) to ensure tadpoles or metamorphosing frogs are not present. If they are present, the qualified biologist will implement a rescue and relocation operation to move any tadpoles or metamorphosing frogs to a safe location in nearby suitable habitat.	Manila CSD and Manila CSD's biologist and contractor	Performance criteria – County, state, and federal standards, consistent with the project's permits Reporting actions – Verify that protection and avoidance measures are in final specifications Schedule – Pre-construction and during construction	
MM BIO-5: Protect Special Status Fish The following shall be implemented by Manila CSD to protect special status fish: – Temporary exclusion fencing will be installed along the shoreline near planned areas of ground disturbance, if any, to limit inadvertent disturbance near aquatic habitat. The temporary exclusion fencing will be shown in the final 100% construction plan set. – Equipment maintenance or refueling will not occur within 100 feet of the Humboldt Bay shoreline. – Erosion control shall be installed for work in tidal drainages to avoid post-construction turbidity inputs into Humboldt Bay. Erosion control measures shall be shown on the final 100% design planset. – Dewatering of aquatic habitat shall not occur. – Fish relocation shall not occur.	Manila CSD and Manila CSD's contractor	Performance criteria – County, state, and federal standards, consistent with the project's permits Reporting actions – Verify requirements are in final specifications Schedule – Pre-construction, during construction; verify applicable measures are implemented; check jobsite compliance as necessary	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
MM BIO-6: Protect Western Bumble Bee If an occupied Western Bumble Bee nest is observed in an active construction zone, the contractor will halt construction activities surrounding the area. A biologist will observe the nest and a buffer would be established to protect the occupied nest.	Manila CSD and Manila CSD's biologist and contractor	Performance criteria – County, state, and federal standards, consistent with the project's permits Reporting actions – Verify requirements are in final specifications Schedule – Pre-construction, during construction; verify applicable measures are implemented; check jobsite compliance as necessary	
MM BIO-7: Avoidance and Minimization Measures to Protect Adjacent Wetlands The Manila CSD shall implement the following avoidance and protection measures for Waters of the United States and Waters of the State adjacent to areas of planned disturbance that will not be impacted (filled or excavated) during Project construction: – The Manila CSD shall attempt to avoid or minimize impacts to wetlands/waters to the greatest extent feasible in the final design plans. – Adjacent wetlands shall be clearly identified in the final construction documents (100% design planset) – Suitable perimeter control measures, such as silt fences, or straw wattles shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These measures shall be installed prior to any clearing or grading activities.	Manila CSD and Manila CSD's contractor	Performance criteria – County, state, and federal standards, consistent with the project's permits Reporting actions – Verify requirements are in final specifications Schedule – Pre-construction, during construction; verify applicable measures are implemented; check jobsite compliance as necessary	
MM BIO-8: Compensate for Loss of Wetlands The Project shall avoid fill and conversion of seasonal wetlands and waters, to the extent feasible. If fill cannot be avoided, the Project shall compensate for the loss of seasonal wetland habitat to ensure there is no net loss in wetlands. The Project shall compensate for impacts to identified wetlands through restoration, rehabilitation, and/or creation of wetland at a ratio of no less than 1:1 and to the satisfaction of jurisdictional agencies. A Habitat, Mitigation, and Monitoring Plan (HMMP) shall be prepared in coordination with the NCRWQB, the USACE, and the Coastal Commission. Onsite locations for three-parameter wetland mitigation shall occur along existing drainage ditches, at the locations where rain gardens would be installed, and the locations where drainage	Manila CSD and Manila CSD's biologist and contractor	Performance criteria – County, state, and federal standards, consistent with the project's permits Reporting actions – Verify requirements are in final specifications; verify completion of HMMP Schedule – Pre-construction, during construction, and post-	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
ditch connection will be created. Onsite locations for one-parameter wetland mitigation shall occur within the Manila Community Park area. The Plan shall be acceptable to the regulatory agencies with jurisdiction over wetlands and waters and include the following elements: mitigation ratios, description and size of the restoration or compensatory area, site preparation and design, plant species, planting design and techniques, maintenance activities, plant storage, irrigation requirements, success criteria, monitoring schedule, and remedial measures. The Plan shall be implemented by the Manila CSD. The Project shall also compensate for impacts to other waters by obtaining required permits from the USACE, the NCRWQCB, and Coastal Commission shall be received prior to the start of any on-site construction activity. The Manila CSD shall ensure any additional measures outlined in the permits are implemented.		construction; verify applicable compensatory mitigation is implemented; check jobsite compliance as necessary	
Cultural Resources			
MM CR-1: Cultural Monitoring and Inadvertent Archaeological Discoveries The Manila CSD will retain a qualified cultural resource monitor who is approved by the Wiyot Tribe, Bear River Band of the Rohnerville Rancheria, and the Blue Lake Rancheria to monitor ground disturbing activities related to this Project in areas the Tribes deem culturally sensitive, specifically: – Any ground disturbance within ~100 feet of a recorded site – Excavation meeting or exceeding 1 foot (below historical flow line) within existing drainage channels – In locations where new culverts will be placed and excavation meets or exceeds 1 foot below existing culvert flow line – In locations where grading is occurring to construct new drainage features regardless of the excavation depth – Any excavation where the construction inspector is not present to oversee that the excavation does not exceed the lines are grades on the final design construction plans The Manila CSD will contact the three Tribal Historic Preservation Officers or their functional equivalent to set up and implement a cultural monitoring contract when a construction schedule has been determined. Advanced coordination with the qualified cultural monitor is required. The Manila CSD shall provide written verification for compliance with this Condition. If cultural or historic-era resources are encountered during construction activities, the contractor on site shall cease all work in the immediate area and within a 66-foot buffer of the discovery location. A qualified archaeologist, as well as the Tribal Historic Preservation Officers for the Bear River Band Rohnerville Rancheria, Blue Lake Rancheria, and Wiyot Tribe shall be	Manila CSD and Manila CSD's archaeologist and contractor, Tribal Cultural Resource Monitor	Performance criteria – County, state, and federal standards Reporting actions – Verify requirements are in final plans and specifications; verify completion of DPR 513 forms, if necessary Schedule – Pre-construction and during construction; verify applicable protection measures are implemented	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
contacted to evaluate the discovery and, in consultation with the applicant and lead agency, develop a treatment plan in any instance where significant impacts cannot be avoided. Prehistoric materials may include obsidian or chert flakes, tools, locally darkened midden soils, groundstone artifacts, shellfish or faunal remains, and human burials.			
MM CR-2: Inadvertent Discovery of Human Remains If human remains are discovered during Project construction, work will stop at the discovery location, within 66 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (PRC, Section 7050.5). The Humboldt County Coroner will be contacted to determine if the cause of death must be investigated. If the Coroner determines that the remains are of Native American origin, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC, PRC, Section 5097). The Coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98.	Manila CSD and Manila CSD's archaeologist and contractor	Performance criteria – County, state, and federal standards Reporting actions – Verify inclusion of language in final plans and specifications Schedule – During construction; verify completion of protection measures and notifications if inadvertent discovery	
Geology and Soils			
MM GEO-1: Inadvertent Discovery of Paleontological Resources In the event that fossils are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), construction activities shall be diverted away from the discovery within 50 feet of the find, and a professional paleontologist shall be notified to document the discovery as needed, to evaluate the potential resource, and to assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the material, if it is determined that the find cannot be avoided. The paleontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices. Any fossils collected from the area shall then be deposited in an accredited and permanent scientific institution where they will be properly curated and preserved.	Manila CSD and Manila CSD's contractor	Performance criteria – County, state, and federal standards Reporting actions – Verify inclusion of language in final plans and specifications Schedule – During construction; verify completion of protection measures and notifications if inadvertent discovery	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
Hazards and Hazardous Materials			
MM HAZ-1: Implement Corridor Study Report Recommendations All recommendations resulting from the Corridor Study Report shall be implemented by the Manila CSD prior to, during, and following construction, as appropriate. – If Soluble Threshold Limit Concentration (STLC) analysis exceeds regulatory levels, Soil and Groundwater Management Plan (SGMP) shall be prepared which identifies soil and groundwater handling options and protocols during construction. The SGMP will identify protocols to proactively manage potentially impacted soil and groundwater within the Project Area and reduce worker exposure. – If the Corridor Study Report indicates constituent of concern impacts above STLC levels to soil and/or groundwater, then construction workers involved in excavation activities will be Hazardous Waste Operations and Emergency Response (HAZWOPER) trained (Occupational Safety and Health Administration [OSHA] 1910.120)	Manila CSD and Manila CSD's contractor	Performance criteria – County and state standards Reporting actions – Verify requirements are in final specifications; verify completion of SAP; verify completion of SGMP and SESTP, if applicable Schedule – Pre- and during construction; verify requirements are implemented; check jobsite compliance as necessary	

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The Power of Commitment

Attachment 6

Basis of Design Report and 65% Design Plans (attached separately)

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