



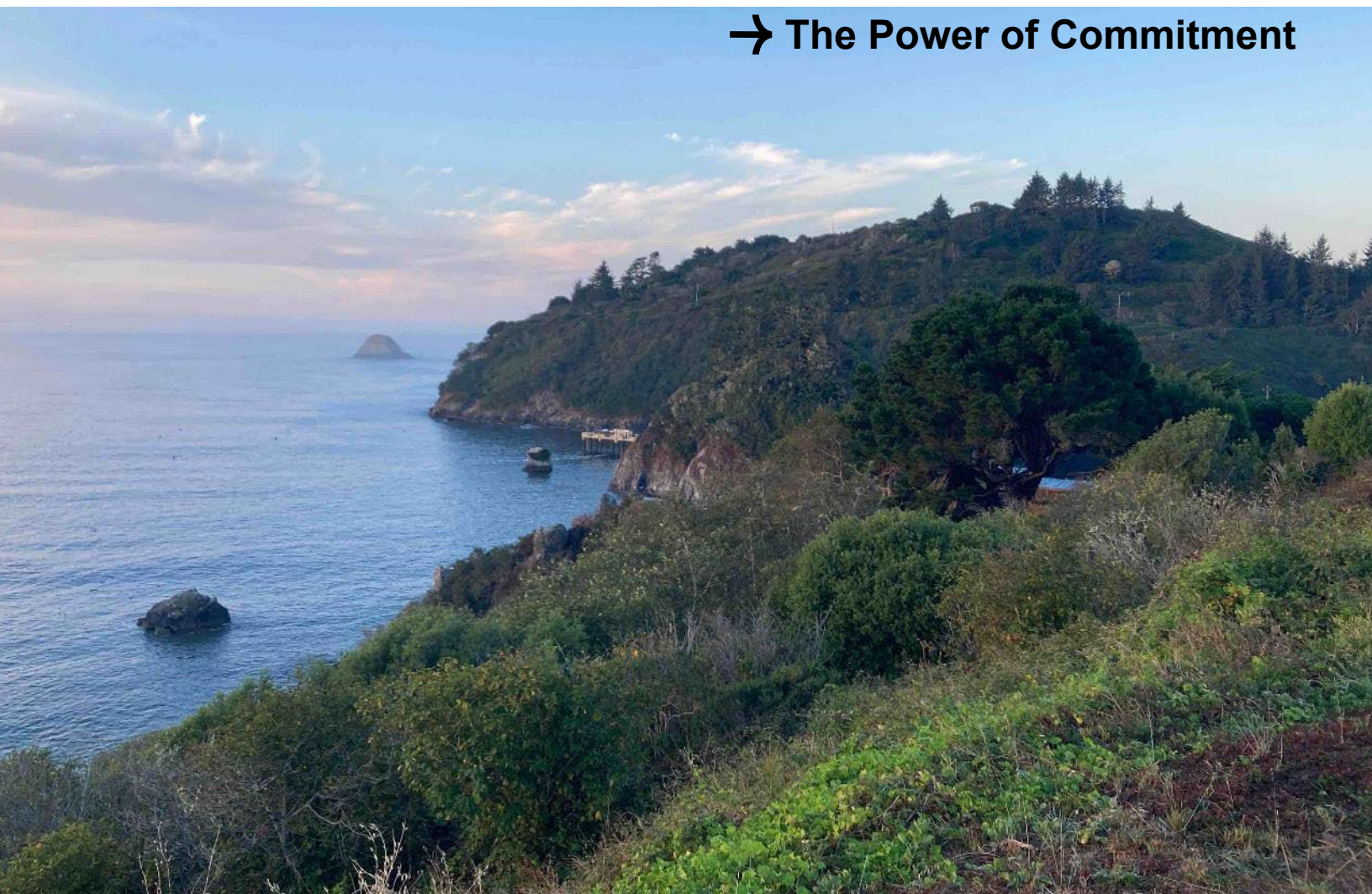
# Trinidad Water Storage Tank and Pipeline Replacement Project

Public Circulation Initial Study & Proposed Mitigated  
Negative Declaration

City of Trinidad

January 20, 2023

→ The Power of Commitment



# Public Circulation Initial Study & Proposed Mitigated Negative Declaration

## Trinidad Water Storage Tank and Pipeline Replacement Project

Prepared for:



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# Appendices

## **Appendices**

### **Appendix A Figures**

Figure 1: Vicinity Map

Figure 2: Coastal Zone

Figure 3: Project Study Area

Figure 3-1: Edward and Van Wycke Streets

Figure 3-2: Westhaven Drive

Figure 3-3: Water Storage Tank Site

### **Appendix B Mitigation, Monitoring, and Reporting Program**

### **Appendix C CalEEMod Modeling Information and Results**

### **Appendix D Biological Resources Report**

### **Appendix E Wetland Delineation**

# Appendix A

## Figures

**Figure 1: Vicinity Map**

**Figure 2: Coastal Zone**

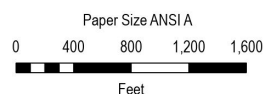
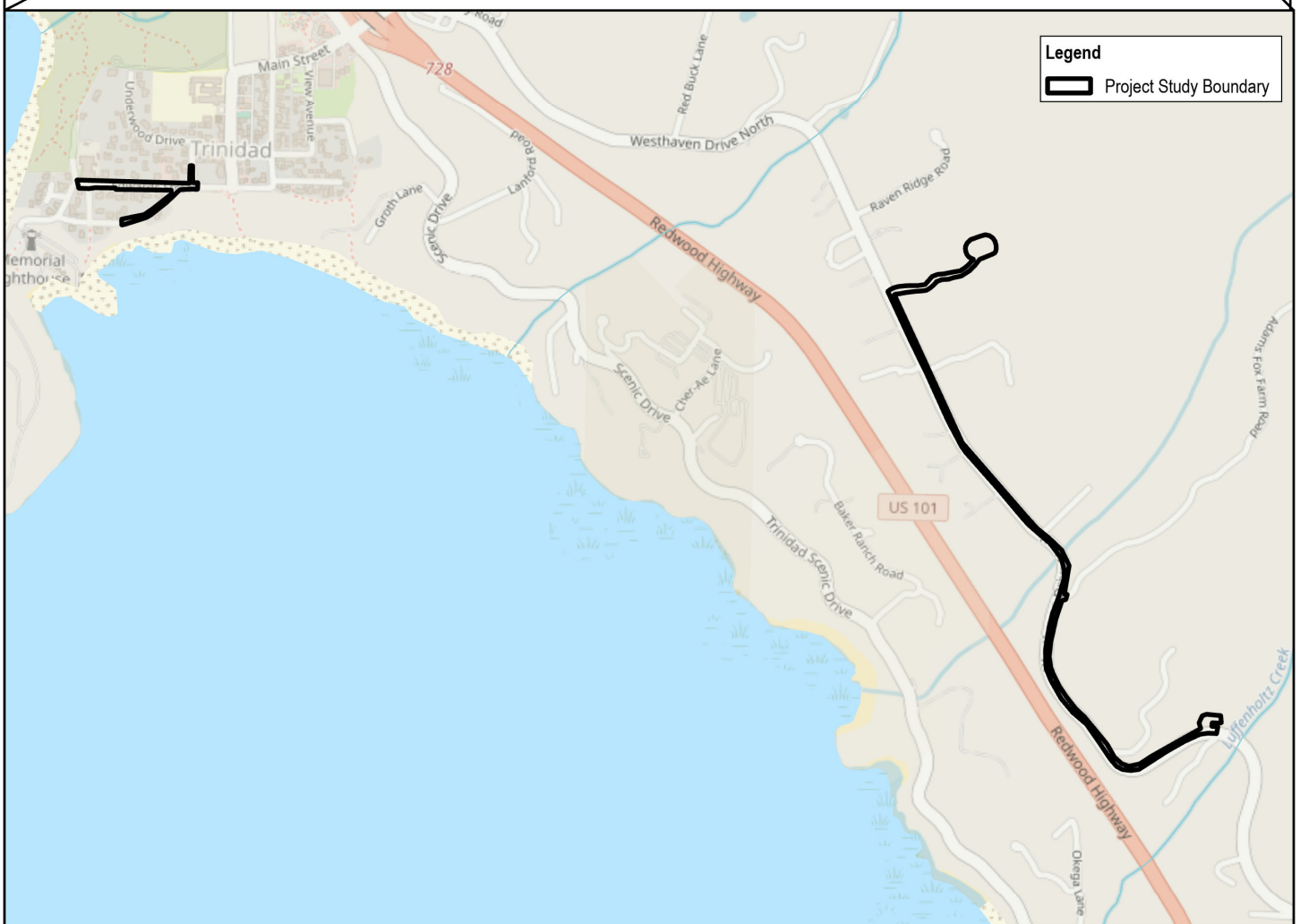
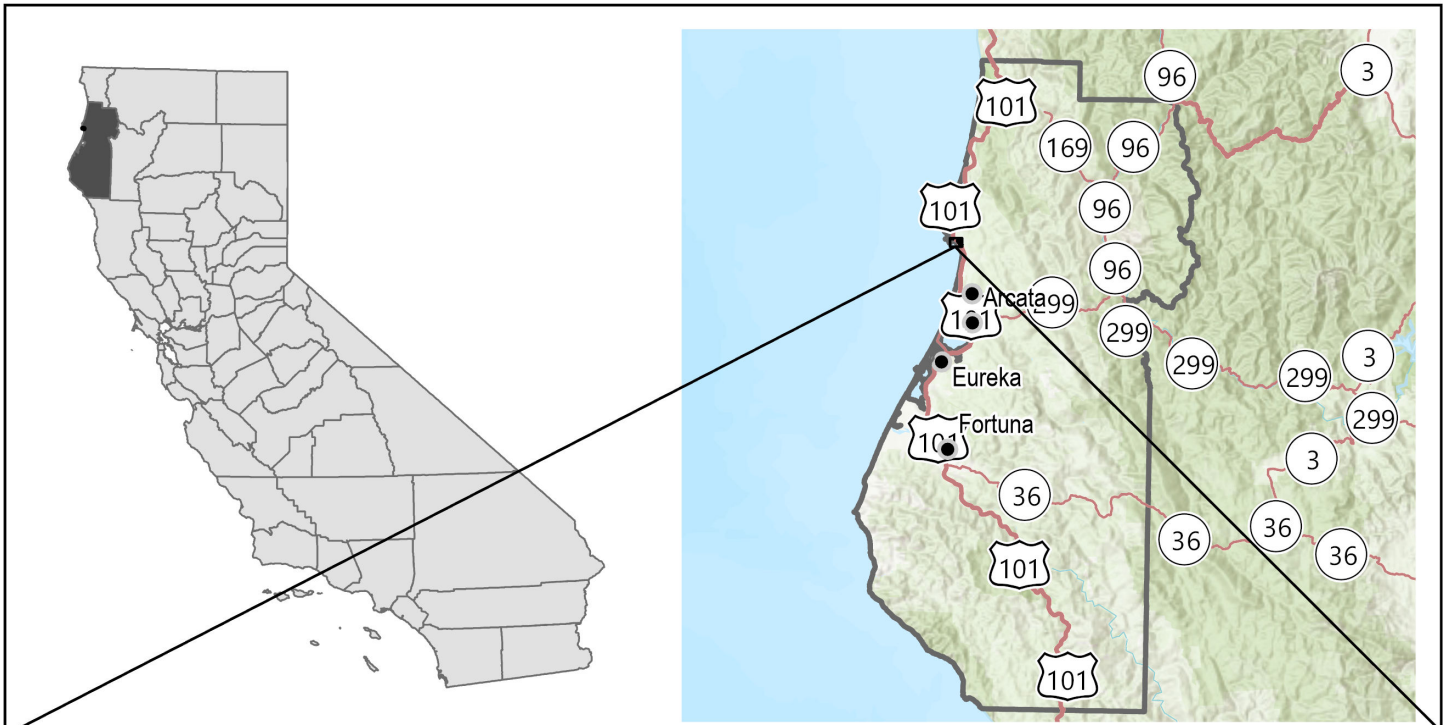
**Figure 3: Project Study Area**

Figure 3-1: Edward and Van Wycke Streets

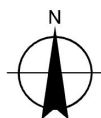
Figure 3-2: Westhaven Drive

Figure 3-3: Water Storage Tank Site





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



**City of Trinidad  
Water Tank and Pipeline  
Replacement Project**

Project No. 12591317  
Revision No. -  
Date 11/3/2022

**Vicinity Map**

**FIGURE 1**





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



**City of Trinidad  
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**Coastal Zone**

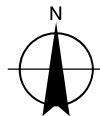
**FIGURE 2**





Paper Size ANSI A  
0 50 100 150 200  
Feet

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



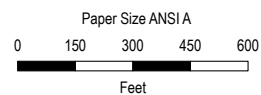
City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 11/14/2022

Project Study Area

FIGURE 3-1





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



**City of Trinidad  
Water Tank and Pipeline  
Replacement Project**

Project No. 12591317  
Revision No. -  
Date 11/14/2022

**Project Study Area**

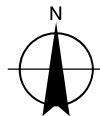
**FIGURE 3-2**





Paper Size ANSI A  
0 30 60 90 120  
Feet

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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 11/14/2022

Project Study Area

FIGURE 3-3



# **Appendix B**

## **Mitigation, Monitoring, and Reporting Program**

# Mitigation Monitoring and Reporting Program

## City of Trinidad - Trinidad Water Storage Tank and Pipeline Replacement Project

SCH No. To be assigned

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
<b>EPA 1 – Stormwater Pollution Prevention Plan (SWPPP)</b> <p>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 City 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.</p>	City's contractor, to be verified by a SWPPP practitioner	<p>Performance criteria – North Coast Regional Water Quality Control Board and City standards</p> <p>Reporting actions – As required by the state permit</p> <p>Schedule - During project construction activities, including work and non-work times</p>	
<b>Air Quality</b>			
<b>MM AQ-1: Measures to Reduce Air Pollution</b> <p>The contractor shall implement the following measures during construction; the measures shall be included as notes on final construction plans:</p> <ul style="list-style-type: none"> <li>– Equipment and activity must not emit dust that is visible crossing the property line.</li> <li>– All exposed surfaces (e.g., parking areas, staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered two times per day in areas of active construction or as necessary. The County or NCUAQMD may require additional treatment in periods of high wind or other circumstances causing visible dust to be generated by the construction site.</li> <li>– All haul trucks transporting soil, sand, or other loose material off-site shall be adequately wetted and / or covered as necessary.</li> <li>– Measures to reduce off-site tracking of mud and dirt shall be required. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day, as necessary. The use of dry power sweeping is prohibited.</li> </ul>	City and City's contractor	<p>Performance criteria – North Coast Unified Air Quality Management District standards</p> <p>Reporting actions – Verify requirements are included in final plans and specifications</p> <p>Schedule – During construction, check jobsite compliance as necessary</p>	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
<ul style="list-style-type: none"> <li>– All vehicle speeds on unpaved roads shall be limited to 15 mph, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures.</li> <li>– All roadways to be repaved shall be completed as soon as possible. Facility foundations shall be laid as soon as possible after grading unless seeding or soil binders are used.</li> <li>– Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage shall be provided for construction workers at all access points.</li> <li>– All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications.</li> <li>– Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The NCUAQMD's phone number shall also be visible to ensure compliance with applicable regulations.</li> </ul>			
<b>Biological Resources</b>			
<b>MM BIO-1: Pre-Construction Survey Avoidance and Minimization Measures to Protect Special Status Plants</b> <ul style="list-style-type: none"> <li>– Seasonally appropriate pre-construction surveys for special status plant species shall occur prior to construction within the planned area of disturbance for the Project, during the appropriate blooming times (April and June). Survey methods shall comply with CDFW rare plant survey protocols and shall be performed by a qualified field botanist. Any populations of special status plant species that are detected shall be mapped.</li> <li>– The locations of any special status plant populations to be avoided shall be clearly identified in the field and surrounded by highly visible exclusion fencing and/or flagging.</li> <li>– A pre-construction worker training will occur within seven days prior to the start of construction and detail any areas where special status plant populations have been identified for protection within the limits of construction, staging, and stockpiling.</li> </ul>	City and City's biologist and contractor	Performance criteria – California Department of Fish and Wildlife (CDFW) standards  Reporting actions – Verify requirements are in final specifications; verify completion and documentation of surveys, if necessary  Schedule – Pre-construction and during construction; verify applicable protection measures are implemented	
<b>MM BIO-2: Avoidance and Minimization Measures to Protect Special Status Mammals</b> <ul style="list-style-type: none"> <li>– Potential locations for denning, roosting, and nesting will be inspected within the PSB and BSA within a week of construction commencing. Varying for species, this includes hollowed-out trees, snags, and under rocks and logs within the BSA.</li> </ul>	City and City's biologist and contractor	Performance criteria – California Department of Fish and Wildlife (CDFW) standards  Reporting actions – Verify that protection and	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
<ul style="list-style-type: none"> <li>– All trees planned for removal will be marked and a qualified biologist will inspect them for signs of the species' inhabitation within a week of removal.</li> <li>– If a den, roost, or nest is located, a no-work buffer will be determined based on the species.</li> <li>– A pre-construction worker training will occur within seven days prior to the start of construction and address identification and protection of special status mammals.</li> </ul>		<p>avoidance measures are in final specifications; verify completion and documentation of surveys, if necessary</p> <p>Schedule – Pre-construction and during construction; verify applicable disturbance buffers and protection measures are implemented</p>	
<p><b>MM BIO-3: Avoidance and Minimization Measures to Protect Special Status and Nesting Birds</b></p> <ul style="list-style-type: none"> <li>– 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.</li> <li>– 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.</li> <li>– 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 up to 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.</li> </ul>	City and City's biologist and contractor	<p>Performance criteria – California Department of Fish and Wildlife (CDFW) standards</p> <p>Reporting actions – Verify that protection and avoidance measures are in final specifications; verify completion and documentation of surveys, if necessary</p> <p>Schedule – Pre-construction and during construction; verify applicable disturbance buffers and protection measures are implemented</p>	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
<ul style="list-style-type: none"> <li>– 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.</li> <li>– A pre-construction worker training will occur within seven days prior to the start of construction and address identification and protection of special status and nesting birds.</li> </ul>			
<p><b>MM BIO-4: Avoidance and Minimization Measures to Protect Special Status Amphibians</b></p> <ul style="list-style-type: none"> <li>– A qualified biologist would perform a pre-construction survey for the amphibian species within seven days prior to commencement of ground disturbance. The survey shall be limited to the PSB and within 100 feet of suitable habitat. Suitable habitat would be determined by the qualified biologist. The biologist would relocate any specimens that occur within the work-impact zone to nearby suitable habitat.</li> <li>– In the event that a special status amphibian is observed in an active construction zone, the contractor would halt construction activities in the area and the frog and/or salamander would be moved by a qualified biologist to a safe location in similar habitat outside of the construction zone.</li> <li>– Work crews will inspect open trenches, pits, and under construction equipment and material left onsite in the morning and evening to look for amphibians that may have become trapped or are seeking refuge.</li> <li>– A pre-construction worker training will occur within seven days prior to the start of construction and address identification and protection of special amphibians.</li> </ul>	City and City's biologist and contractor	<p>Performance criteria – County, state, and federal standards, consistent with the project's permits</p> <p>Reporting actions – Verify that protection and avoidance measures are in final specifications</p> <p>Schedule – Pre-construction and during construction</p>	
<p><b>MM BIO-5: Avoidance and Offset to Protect Sensitive Natural Communities</b></p> <p>Construction within mapped Sensitive Natural Communities shall be avoided to the greatest extent practicable. If impacts are unavoidable, mitigation will occur at a minimum ratio of 1:1. A Mitigation and Monitoring Plan shall be prepared in coordination with State resource</p>	City and City's contractor	Performance criteria – California Department of Fish and Wildlife (CDFW) standards	



Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
<p>agencies. Onsite locations for wetland mitigation shall be prioritized. If suitable locations for onsite mitigation is not sufficiently available, offsite mitigation shall occur.</p> <p>The Plan shall be acceptable to State agencies with jurisdiction and include the following elements: proposed 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 ratio and conditions of mitigation will be negotiated in consultation with the City and State resource agencies with jurisdiction over sensitive natural communities. The Plan shall be implemented by the City.</p>		<p>Reporting actions – Completion and documentation of surveys, if necessary</p> <p>Schedule – Pre-construction and during construction; verify applicable disturbance buffers and protection measures are implemented</p>	
<p><b>MM BIO-6: Avoidance and Minimization Measures to Protect Adjacent Wetlands</b></p> <ul style="list-style-type: none"> <li>– The City shall attempt to avoid or minimize impacts to wetlands/waters to the greatest extent feasible in the final design plans.</li> <li>– Adjacent wetlands shall be clearly identified in the construction documents and reviewed by the City prior to issuing for bid to ensure they are clearly marked as equipment exclusion zones during construction.</li> <li>– 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.</li> <li>– Temporarily impacted ditches will be rebuilt in kind following the close of construction.</li> </ul>	City and City's contractor	<p>Performance criteria – City, state, and federal standards, consistent with the project's permits</p> <p>Reporting actions – Verify requirements are in final specifications</p> <p>Schedule – Pre-construction, during construction; verify applicable measures are implemented; check jobsite compliance as necessary</p>	
<b>Cultural Resources</b>			
<p><b>MM CR-1: Cultural Monitor</b></p> <ul style="list-style-type: none"> <li>– Qualified cultural monitors will be hired by the contractor prior to construction.</li> <li>– Cultural monitors must be onsite during grading and earthwork activities. Cultural monitors are to include both a tribally trained monitor and a Bachelor of Arts or higher level archaeologist, with field-school training in historical archaeology or two years of experience in historical archaeology.</li> <li>– Cultural Resource Monitors must be empowered to halt heavy equipment operations in the event that significant cultural features or human remains are uncovered. Construction activities in the immediate vicinity would be delayed until an archaeologist, qualified to the Secretary of Interior Standards, has assessed the significance of the find.</li> <li>– The Cultural Resource Monitor must be kept informed by the contractor and understand the ground disturbance schedule. Field notes should be kept by the Cultural Resource Monitor and a brief letter report of the monitoring effort filed with the North Coastal Information</li> </ul>	City and City's archaeologist and contractor, Tribal Cultural Resource Monitor	<p>Performance criteria – City, state, and federal standards</p> <p>Reporting actions – Verify requirements are in final plans and specifications; verify completion of DPR 513 forms, if necessary</p> <p>Schedule – Pre-construction and during construction; verify applicable protection measures are implemented</p>	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
Center. The Cultural Resource Monitor need only be present during ground disturbing activities.			
<b>MM CR-2: Inadvertent Discovery of Archaeological Material</b> If cultural materials for example: chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work shall be stopped within 66 feet of the discovery, per the requirements of CEQA (Revised Guidelines, Title 14 CCR 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials, and offered recommendations for further action. Tribal representatives shall be notified.	City and City's archaeologist and contractor	Performance criteria – City, state, and federal standards  Reporting actions – Verify requirements are in final specifications; verify completion of archaeological monitoring; verify completion of noticing as detailed in MM CR-2 upon inadvertent discovery  Schedule – During construction; verify completion of archaeological monitoring as detailed in MM CR-2	
<b>MM CR-3: Inadvertent Discovery of Human Remains</b> If human remains are discovered during Project construction, work would 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 would 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 NAHC (PRC, Section 5097). The Coroner would contact the NAHC. The descendants or most likely descendants of the deceased would be contacted, and work would 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.	City and City's archaeologist and contractor	Performance criteria – City, 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	
<b>Geology and Soils</b>			
<b>MM GEO-1: Implement Recommendations of the Geotechnical Investigation</b> A geotechnical investigation will be completed to support the Project's design, prior to implementation. The City will implement the recommendations of the geotechnical	City and City's contractor	Performance criteria – Geotechnical Investigation Report	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
<p>investigation before and/or during construction as appropriate to reduce risks associated with unstable soils, erosion, and other geologic hazards.</p>		<p>Reporting actions – Verify inclusion of recommendations in final plans and specifications</p> <p>Schedule – Pre- and during construction; verify completion of protection measures</p>	
<p><b>MM GEO-2: Inadvertent Discovery of Paleontological Resources</b></p> <p>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 would be properly curated and preserved.</p>	<p>City and City's contractor</p>	<p>Performance criteria – City, state, and federal standards</p> <p>Reporting actions – Verify inclusion of language in final plans and specifications</p> <p>Schedule – During construction; verify completion of protection measures and notifications if inadvertent discovery</p>	
<b>Transportation</b>			
<p><b>MM TR-1: Maintain Emergency Access and Notify Emergency Responders</b></p> <p>The City shall require contractors to provide adequate emergency access to all properties along the corridor during the construction process. At locations where the access to a nearby property is temporarily blocked, the contractor shall be required to have ready the means necessary to accommodate access by emergency vehicles to such properties, such as plating over excavations. As construction progresses, emergency providers shall be notified in advance of the timing, location, and duration of construction activities and the locations and durations of any temporary lane closures.</p>	<p>City and City's contractor</p>	<p>Performance criteria – City and county standards</p> <p>Reporting actions – Verify requirements are in final specifications; verify completion</p> <p>Schedule – Pre- and during construction; verify jobsite compliance as necessary</p>	

# **Appendix C**

## **CalEEMod Modeling Information and Results**

Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

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

Trinidad Drought Relief 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	0.50	Acre	0.50	21,780.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	103
Climate Zone	1			Operational Year	2024

Utility Company

CO2 Intensity (lb/MW hr)	0	CH4 Intensity (lb/MW hr)	0	N2O Intensity (lb/MW hr)	0
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1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction-only

Land Use - Assumed up to 0.5 acre of repaving

Construction Phase - Project-Specific Phasing

Off-road Equipment - Project-Specific Equipment and Use

Grading - Total 1,422 CY for import/export.

Demolition - Redwood Storage Tank Demo, Appx 1,250 sf

Trips and VMT - Vendor Trips Increased for all trenching, paving, and demobilization

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	72.00
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	2.00	48.00
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	NumDays	1.00	24.00



## Trinidad Water Storage Tank and Pipeline Replacement 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	4.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	4/7/2023	10/23/2023
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tblConstructionPhase	PhaseEndDate	11/18/2022	8/25/2023
tblConstructionPhase	PhaseEndDate	4/14/2023	9/21/2023
tblConstructionPhase	PhaseEndDate	11/16/2022	6/28/2023
tblConstructionPhase	PhaseStartDate	11/19/2022	8/1/2023
tblConstructionPhase	PhaseStartDate	11/2/2022	6/1/2023
tblConstructionPhase	PhaseStartDate	11/17/2022	7/1/2023
tblConstructionPhase	PhaseStartDate	4/8/2023	9/8/2023
tblConstructionPhase	PhaseStartDate	11/16/2022	6/1/2023
tblGrading	MaterialExported	0.00	1,422.00
tblOffRoadEquipment	HorsePower	172.00	5.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.42	0.42
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tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

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

tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

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

tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

**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					
2023	0.0866	0.7734	1.0237	1.9400e-003	0.0121	0.0351	0.0471	3.1900e-003	0.0331	0.0363	0.0000	170.8024	170.8024	0.0383	1.8700e-003	172.3179
Maximum	0.0866	0.7734	1.0237	1.9400e-003	0.0121	0.0351	0.0471	3.1900e-003	0.0331	0.0363	0.0000	170.8024	170.8024	0.0383	1.8700e-003	172.3179

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.0 Construction Detail****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	01 Demolition	Demolition	6/1/2023	6/29/2023	6	25	
2	02 Site Preparation	Site Preparation	6/1/2023	6/28/2023	6	24	
3	03 Grading	Grading	7/1/2023	8/25/2023	6	48	
4	04 Building Construction	Building Construction	8/1/2023	10/23/2023	6	72	
5	05 Trenching In-Road	Trenching	7/1/2023	8/25/2023	6	48	
6	06 Trenching Laterals	Trenching	9/25/2023	10/7/2023	6	12	
7	07 Trenching (Trenchless)	Trenching	7/2/2023	8/12/2023	6	36	
8	08 Paving	Paving	9/8/2023	9/21/2023	6	12	
9	09 Demobilization	Site Preparation	11/2/2023	11/6/2023	6	4	

**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 0****Acres of Paving: 0.5****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating –****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
01 Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
01 Demolition	Excavators	1	8.00	158	0.38
02 Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
02 Site Preparation	Excavators	1	8.00	158	0.38
02 Site Preparation	Other Construction Equipment	1	8.00	5	0.42
03 Grading	Excavators	1	8.00	158	0.38
03 Grading	Skid Steer Loaders	1	8.00	65	0.37
03 Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
04 Building Construction	Cranes	1	8.00	231	0.29
04 Building Construction	Forklifts	1	8.00	89	0.20
04 Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

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

04 Building Construction	Generator Sets	1	8.00	84	0.74
05 Trenching In-Road	Tractors/Loaders/Backhoes	1	8.00	97	0.37
05 Trenching In-Road	Excavators	1	8.00	158	0.38
05 Trenching In-Road	Concrete/Industrial Saws	1	4.00	81	0.73
06 Trenching Laterals	Tractors/Loaders/Backhoes	1	8.00	97	0.37
06 Trenching Laterals	Excavators	1	8.00	158	0.38
06 Trenching Laterals	Concrete/Industrial Saws	1	4.00	81	0.73
07 Trenching (Trenchless)	Bore/Drill Rigs	1	8.00	221	0.50
07 Trenching (Trenchless)	Concrete/Industrial Saws	1	4.00	81	0.73
08 Paving	Rollers	1	8.00	80	0.38
08 Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
08 Paving	Air Compressors	1	8.00	78	0.48
08 Paving	Paving Equipment	1	8.00	132	0.36
09 Demobilization	Graders	0	8.00	187	0.41
09 Demobilization	Tractors/Loaders/Backhoes	0	8.00	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
01 Demolition	2	5.00	0.00	6.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
02 Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
03 Grading	3	8.00	0.00	178.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
04 Building Construction	4	9.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
08 Paving	4	10.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
05 Trenching In-Road	3	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
06 Trenching Laterals	3	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
07 Trenching (Trenchless)	2	5.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
09 Demobilization	0	0.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT



## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.1 Mitigation Measures Construction****3.2 01 Demolition - 2023****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					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5400e-003	0.0518	0.0866	1.4000e-004		2.5600e-003	2.5600e-003		2.4800e-003	2.4800e-003	0.0000	12.4202	12.4202	2.1700e-003	0.0000	12.4745
<b>Total</b>	<b>6.5400e-003</b>	<b>0.0518</b>	<b>0.0866</b>	<b>1.4000e-004</b>	<b>6.2000e-004</b>	<b>2.5600e-003</b>	<b>3.1800e-003</b>	<b>9.0000e-005</b>	<b>2.4800e-003</b>	<b>2.5700e-003</b>	<b>0.0000</b>	<b>12.4202</b>	<b>12.4202</b>	<b>2.1700e-003</b>	<b>0.0000</b>	<b>12.4745</b>

**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	5.2000e-004	9.0000e-005	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1772	0.1772	0.0000	3.0000e-005	0.1855
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.2000e-004	2.0800e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4038	0.4038	2.0000e-005	2.0000e-005	0.4091
<b>Total</b>	<b>3.3000e-004</b>	<b>7.4000e-004</b>	<b>2.1700e-003</b>	<b>0.0000</b>	<b>5.3000e-004</b>	<b>0.0000</b>	<b>5.4000e-004</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.5810</b>	<b>0.5810</b>	<b>2.0000e-005</b>	<b>5.0000e-005</b>	<b>0.5946</b>

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.3 02 Site Preparation - 2023****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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0900e-003	0.0371	0.0661	1.0000e-004		1.8200e-003	1.8200e-003		1.6800e-003	1.6800e-003	0.0000	8.7545	8.7545	2.8300e-003	0.0000	8.8253
<b>Total</b>	<b>4.0900e-003</b>	<b>0.0371</b>	<b>0.0661</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.8200e-003</b>	<b>1.8200e-003</b>	<b>0.0000</b>	<b>1.6800e-003</b>	<b>1.6800e-003</b>	<b>0.0000</b>	<b>8.7545</b>	<b>8.7545</b>	<b>2.8300e-003</b>	<b>0.0000</b>	<b>8.8253</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.4000e-004	3.2000e-003	1.0000e-005	7.4000e-004	0.0000	7.5000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.6203	0.6203	3.0000e-005	2.0000e-005	0.6284
<b>Total</b>	<b>5.0000e-004</b>	<b>3.4000e-004</b>	<b>3.2000e-003</b>	<b>1.0000e-005</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>7.5000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.6203</b>	<b>0.6203</b>	<b>3.0000e-005</b>	<b>2.0000e-005</b>	<b>0.6284</b>

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.4 03 Grading - 2023****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					8.0000e-005	0.0000	8.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7400e-003	0.0949	0.1652	2.5000e-004		4.3500e-003	4.3500e-003		4.0000e-003	4.0000e-003	0.0000	21.8564	21.8564	7.0700e-003	0.0000	22.0331
<b>Total</b>	<b>9.7400e-003</b>	<b>0.0949</b>	<b>0.1652</b>	<b>2.5000e-004</b>	<b>8.0000e-005</b>	<b>4.3500e-003</b>	<b>4.4300e-003</b>	<b>1.0000e-005</b>	<b>4.0000e-003</b>	<b>4.0100e-003</b>	<b>0.0000</b>	<b>21.8564</b>	<b>21.8564</b>	<b>7.0700e-003</b>	<b>0.0000</b>	<b>22.0331</b>

**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	2.6000e-004	0.0154	2.5500e-003	5.0000e-005	1.4700e-003	1.3000e-004	1.6000e-003	4.0000e-004	1.2000e-004	5.3000e-004	0.0000	5.2555	5.2555	1.0000e-005	8.3000e-004	5.5019
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-003	6.8000e-004	6.4000e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2406	1.2406	6.0000e-005	5.0000e-005	1.2568
<b>Total</b>	<b>1.2600e-003</b>	<b>0.0161</b>	<b>8.9500e-003</b>	<b>6.0000e-005</b>	<b>2.9500e-003</b>	<b>1.4000e-004</b>	<b>3.0900e-003</b>	<b>7.9000e-004</b>	<b>1.3000e-004</b>	<b>9.3000e-004</b>	<b>0.0000</b>	<b>6.4960</b>	<b>6.4960</b>	<b>7.0000e-005</b>	<b>8.8000e-004</b>	<b>6.7587</b>

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.5 04 Building Construction - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0328	0.3250	0.3197	6.1000e-004		0.0152	0.0152		0.0144	0.0144	0.0000	53.2813	53.2813	0.0116	0.0000	53.5700
<b>Total</b>	<b>0.0328</b>	<b>0.3250</b>	<b>0.3197</b>	<b>6.1000e-004</b>		<b>0.0152</b>	<b>0.0152</b>		<b>0.0144</b>	<b>0.0144</b>	<b>0.0000</b>	<b>53.2813</b>	<b>53.2813</b>	<b>0.0116</b>	<b>0.0000</b>	<b>53.5700</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-004	8.2800e-003	2.5000e-003	3.0000e-005	9.2000e-004	5.0000e-005	9.8000e-004	2.7000e-004	5.0000e-005	3.2000e-004	0.0000	2.9332	2.9332	1.0000e-005	4.2000e-004	3.0578
Worker	1.6800e-003	1.1400e-003	0.0108	2.0000e-005	2.5000e-003	2.0000e-005	2.5200e-003	6.7000e-004	2.0000e-005	6.8000e-004	0.0000	2.0935	2.0935	1.0000e-004	8.0000e-005	2.1209
<b>Total</b>	<b>1.9800e-003</b>	<b>9.4200e-003</b>	<b>0.0133</b>	<b>5.0000e-005</b>	<b>3.4200e-003</b>	<b>7.0000e-005</b>	<b>3.5000e-003</b>	<b>9.4000e-004</b>	<b>7.0000e-005</b>	<b>1.0000e-003</b>	<b>0.0000</b>	<b>5.0267</b>	<b>5.0267</b>	<b>1.1000e-004</b>	<b>5.0000e-004</b>	<b>5.1787</b>

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.6 05 Trenching In-Road - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0122	0.1051	0.1758	2.7000e-004		5.1800e-003	5.1800e-003		4.8900e-003	4.8900e-003	0.0000	23.9343	23.9343	5.9700e-003	0.0000	24.0836
<b>Total</b>	<b>0.0122</b>	<b>0.1051</b>	<b>0.1758</b>	<b>2.7000e-004</b>		<b>5.1800e-003</b>	<b>5.1800e-003</b>		<b>4.8900e-003</b>	<b>4.8900e-003</b>	<b>0.0000</b>	<b>23.9343</b>	<b>23.9343</b>	<b>5.9700e-003</b>	<b>0.0000</b>	<b>24.0836</b>

**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	1.0000e-004	2.7600e-003	8.3000e-004	1.0000e-005	3.1000e-004	2.0000e-005	3.3000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	0.9777	0.9777	0.0000	1.4000e-004	1.0193
Worker	1.0000e-003	6.8000e-004	6.4000e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.2406	1.2406	6.0000e-005	5.0000e-005	1.2568
<b>Total</b>	<b>1.1000e-003</b>	<b>3.4400e-003</b>	<b>7.2300e-003</b>	<b>2.0000e-005</b>	<b>1.7900e-003</b>	<b>3.0000e-005</b>	<b>1.8200e-003</b>	<b>4.8000e-004</b>	<b>3.0000e-005</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>2.2183</b>	<b>2.2183</b>	<b>6.0000e-005</b>	<b>1.9000e-004</b>	<b>2.2761</b>

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.7 06 Trenching Laterals - 2023****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	3.0400e-003	0.0263	0.0440	7.0000e-005		1.2900e-003	1.2900e-003		1.2200e-003	1.2200e-003	0.0000	5.9836	5.9836	1.4900e-003	0.0000	6.0209
<b>Total</b>	<b>3.0400e-003</b>	<b>0.0263</b>	<b>0.0440</b>	<b>7.0000e-005</b>		<b>1.2900e-003</b>	<b>1.2900e-003</b>		<b>1.2200e-003</b>	<b>1.2200e-003</b>	<b>0.0000</b>	<b>5.9836</b>	<b>5.9836</b>	<b>1.4900e-003</b>	<b>0.0000</b>	<b>6.0209</b>

**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	6.9000e-004	2.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.2444	0.2444	0.0000	3.0000e-005	0.2548
Worker	2.5000e-004	1.7000e-004	1.6000e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3102	0.3102	1.0000e-005	1.0000e-005	0.3142
<b>Total</b>	<b>2.7000e-004</b>	<b>8.6000e-004</b>	<b>1.8100e-003</b>	<b>0.0000</b>	<b>4.5000e-004</b>	<b>0.0000</b>	<b>4.5000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.5546</b>	<b>0.5546</b>	<b>1.0000e-005</b>	<b>4.0000e-005</b>	<b>0.5690</b>

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.8 07 Trenching (Trenchless) - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.9000e-003	0.0602	0.0697	2.3000e-004		2.3500e-003	2.3500e-003		2.2500e-003	2.2500e-003	0.0000	19.8616	19.8616	5.1000e-003	0.0000	19.9890
<b>Total</b>	<b>6.9000e-003</b>	<b>0.0602</b>	<b>0.0697</b>	<b>2.3000e-004</b>		<b>2.3500e-003</b>	<b>2.3500e-003</b>		<b>2.2500e-003</b>	<b>2.2500e-003</b>	<b>0.0000</b>	<b>19.8616</b>	<b>19.8616</b>	<b>5.1000e-003</b>	<b>0.0000</b>	<b>19.9890</b>

**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	7.0000e-005	2.0700e-003	6.2000e-004	1.0000e-005	2.3000e-004	1.0000e-005	2.4000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.7333	0.7333	0.0000	1.0000e-004	0.7645
Worker	4.7000e-004	3.2000e-004	3.0000e-003	1.0000e-005	6.9000e-004	0.0000	7.0000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.5815	0.5815	3.0000e-005	2.0000e-005	0.5891
<b>Total</b>	<b>5.4000e-004</b>	<b>2.3900e-003</b>	<b>3.6200e-003</b>	<b>2.0000e-005</b>	<b>9.2000e-004</b>	<b>1.0000e-005</b>	<b>9.4000e-004</b>	<b>2.5000e-004</b>	<b>1.0000e-005</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>1.3148</b>	<b>1.3148</b>	<b>3.0000e-005</b>	<b>1.2000e-004</b>	<b>1.3536</b>

## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.9 08 Paving - 2023****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	4.3700e-003	0.0388	0.0541	8.0000e-005		2.0100e-003	2.0100e-003		1.9000e-003	1.9000e-003	0.0000	7.1852	7.1852	1.7900e-003	0.0000	7.2298
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.0300e-003</b>	<b>0.0388</b>	<b>0.0541</b>	<b>8.0000e-005</b>		<b>2.0100e-003</b>	<b>2.0100e-003</b>		<b>1.9000e-003</b>	<b>1.9000e-003</b>	<b>0.0000</b>	<b>7.1852</b>	<b>7.1852</b>	<b>1.7900e-003</b>	<b>0.0000</b>	<b>7.2298</b>

**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	6.9000e-004	2.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.2444	0.2444	0.0000	3.0000e-005	0.2548
Worker	3.1000e-004	2.1000e-004	2.0000e-003	0.0000	4.6000e-004	0.0000	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.3877	0.3877	2.0000e-005	2.0000e-005	0.3928
<b>Total</b>	<b>3.3000e-004</b>	<b>9.0000e-004</b>	<b>2.2100e-003</b>	<b>0.0000</b>	<b>5.4000e-004</b>	<b>0.0000</b>	<b>5.5000e-004</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.6321</b>	<b>0.6321</b>	<b>2.0000e-005</b>	<b>5.0000e-005</b>	<b>0.6476</b>



## Trinidad Water Storage Tank and Pipeline Replacement Project - Construction - Humboldt County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied****3.10 09 Demobilization - 2023****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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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	1.0000e-005	2.3000e-004	7.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0815	0.0815	0.0000	1.0000e-005	0.0849
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.0000e-005</b>	<b>2.3000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0815</b>	<b>0.0815</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0849</b>

# **Appendix D**

## **Biological Resources Report**



# **Biological Resources Report**

## **Trinidad Water Storage Tank and Pipeline Replacement Project**

City of Trinidad

December 22, 2022



# Biological Resources Report: REV1

# Trinidad Water Storage Tank and Pipeline Replacement Project

This document has been prepared for:



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December 22, 2022

# Contents

Acronyms and Abbreviations .....	iii
1. Introduction .....	1
1.1 Project Summary .....	1
1.2 Project Location .....	1
1.3 Definition of the Project Study Boundary .....	2
1.4 Construction Schedule .....	2
1.5 Other Public Agencies Whose Approval is Required .....	2
2. Regulatory Background .....	2
2.1 Federal Jurisdiction .....	2
National Environmental Policy Act .....	2
Endangered Species Act .....	3
Habitat Conservation Plans .....	3
Executive Order 13112, Invasive Species .....	3
Migratory Bird Treaty Act .....	3
Clean Water Act .....	4
Executive Order 11990 .....	4
Bald and Golden Eagle Protection Act .....	4
2.2 State Jurisdiction .....	5
California Environmental Quality Act (CEQA) .....	5
Porter-Cologne Water Quality Act .....	5
California Endangered Species Act .....	5
Other State Special Status Species and Communities .....	5
Sensitive Natural Communities .....	6
Environmentally Sensitive Habitat Areas .....	6
California Fish and Game Code .....	7
2.3 Local Jurisdiction .....	8
Trinidad Area Plan .....	8
City of Trinidad General Plan .....	9
3. Environmental Baseline Conditions .....	9
3.1 Habitat Elements .....	9
3.2 Topography and Soils .....	10
3.3 Hydrology .....	10
3.4 Habitat Access, Connectivity, and Migratory Corridors .....	10
4. Methods .....	10
4.1 Preliminary Investigation .....	10
Database Searches (CNDDDB, CNPS, EFH, IPaC, NOAA Critical Habitat) .....	10
4.2 Field Surveys .....	11
Special Status Plants .....	11
Aquatic Resources .....	12
Wildlife Survey and Wildlife Habitat Evaluation Methods .....	12
5. Results .....	12

5.1	Summary of General Biological Resources .....	12
5.2	Special Status Plants .....	13
	Special Status Plants and Sensitive Habitats .....	13
5.2.1	Special Status Plants with Moderate Potential to Occur .....	22
5.3	Sensitive Natural Communities and Riparian Habitat .....	23
5.4	Special Status Wildlife .....	24
	Special Status Wildlife Species .....	24
6.	Conclusion and Recommendations .....	43
7.	Scope and limitations.....	47
8.	Assumptions .....	47
9.	Literature Cited .....	47
10.	Report Preparers .....	50
10.1	Client.....	50
10.2	GHD.....	50

## Table index

Table 1	NatureServe Conservation Status Ranks for Sensitive Natural Communities (SNCs) .....	6
Table 2	Potential for Special Status Plants to Occur in the PSB .....	14
Table 3	Vegetation Alliances and Associations in the Project Area and PSB .....	23
Table 4	Potential for Special Status Wildlife to Occur in the PSB and BSA .....	26

## Appendices

Appendix A	Figures
Appendix B	Database Search Results (CNDDDB, CNPS, IPaC, EFH, NOAA Fisheries Critical Habitat)
Appendix C	Site Visit Photographs
Appendix D	List of Plant Species Observed On-site
Appendix E	Rapid Assessment Datasheets
Appendix F	List of Wildlife Species Detected On-site

# Acronyms and Abbreviations

BRR	Biological Resources Report
BGEPA	Bald and Golden Eagle Protection Act
BSA	Biological Study Area
CCC or Commission	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Database
CRPR	California Rare Plant Ranking
CWA	Clean Water Act
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESHA	Environmentally Sensitive Habitat Area
ESU	Ecologically Significant Unit
FGC	Fish and Game Code
FMP	Fisheries Management Plan
FP	Fully Protected
HCP	Habitat Conservation Plan
HCLCP	Humboldt County Local Coastal Program
IPaC	Information for Planning and Conservation
LCP	Local Coastal Plan
MBTA	Migratory Bird Treaty Act
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NCCP	Natural Community Conservation Planning
NCRWQCB	North Coast Regional Water Quality Control Board
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPPA	Native Plant Protection Act
Other Waters	Other Waters of the United States and or State of California

PFMC	Pacific Fisheries Management Council
PSB	Project Study Boundary
RWQCB	Regional Water Quality Control Board
SAL	Special Animals List
SC	State Candidate
SE	State Endangered
SERP	Statutory Exemption for Restoration Project
SR	State Rare
SSC	Species of Special Concern
ST	State Threatened
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WL	Watch List



# 1. Introduction

The purpose of this Biological Resources Report (BRR) is to identify sensitive biological resources, including plant and wildlife species and their habitat, that may occur in the footprint or in the vicinity of the Trinidad Water Storage Tank and Pipeline Replacement Project (hereafter Project, described below). Sensitive Natural Communities (SNCs), Environmentally Sensitive Habitat Areas (ESHAs), species listed as endangered or threatened under the federal or state Endangered Species Act (ESA and California ESA respectively) or their designated critical habitat, as well as California special-status species and habitats, are the focus of this BRR. Common species without special protections are not considered in this BRR. The purpose of the BRR is to inform California Environmental Quality Act (CEQA) analysis and Project permit applications.

## 1.1 Project Summary

The purpose of this Project is to replace 1.4 miles of vulnerable pipelines and construct a 300,000-gallon storage tank and chlorination booster system for the City of Trinidad.

Key Project elements include:

- Replace approximately 6,400 feet of eight-inch water feed supply main along Westhaven Drive between the Water Treatment Plant and the water storage tanks. This section will be replaced with dual lines (to/from) to include approximately 1,500 feet of 10-inch distribution line and approximately 5,250 feet of six-inch distribution lines in parallel with the supply main.
- Replace an existing 150,000-gallon redwood storage tank with a 300,000-gallon steel water storage tank, additional valving, telemetry, and chlorine booster system for the distribution system and improving maintenance access and defensible space around the tanks.
- Replace approximately 800 feet of eight-inch and 300 feet of six-inch water main along eastern Van Wycke and Edwards Street from Hector to Galindo with cluster valves, pressure regulating valve, fire hydrant, and blowoff valves near the end of eastern Van Wycke Trail, also removing the existing temporary line.

## 1.2 Project Location

The Project is located in the City of Trinidad and in the community of Westhaven in Humboldt County, California (**Appendix A, Figure 1**). Two areas of activity are included in the Project Study Boundary (PSB). One Project Area is in the City of Trinidad along Edwards Street, Van Wycke Street, and Hector Street (**Appendix A, Figure 2-1**). The other Project Area is in the community of Westhaven along Westhaven Drive and approximately 830 feet east to the water tank location (**Appendix A, Figure 2-2**). The water tank property and the water treatment plant have both been annexed into City of Trinidad City limits. The Project is entirely within the Coastal Zone, within the Appeal and Local Jurisdiction which is regulated by the City of Trinidad Local Coastal Program (LCP) in the area of Edwards and Van Wycke Street as well as the water tanks and water treatment plant (CoT 1978). The area of Westhaven Drive outside of the water tank and water treatment plant properties are regulated by the Humboldt County LCP (HCPD 2014).

### **1.3 Definition of the Project Study Boundary**

The Project Study Boundary (PSB) is considered the area of ground disturbance necessary to implement the Project and is approximately 5.7 acres. For the purposes of this BRR, the Biological Study Area (BSA) includes the PSB and a buffer of 100 feet (radius) outside the PSB specific to considerations for wildlife species (**Appendix A, Figures 2-1 and 2-2**). Special status wildlife species were evaluated at the level of the BSA. This buffer around the PSB is designed to account for any auditory and visual disturbance to wildlife or other resources, as well as other potential impacts such as increased sedimentation and turbidity from construction or increased dust.

### **1.4 Construction Schedule**

Construction would occur within a single construction season in 2023. If feasible, vegetation clearing would occur outside of the nesting bird season, before March 15 or after August 15.

### **1.5 Other Public Agencies Whose Approval is Required**

The following regulatory documentation is expected to be required for the Project:

- CEQA - Initial Study/Proposed Mitigated Negative Declaration, with the City of Trinidad as the lead agency
- Section 404 of the Clean Water Act (CWA) permit from the U.S. Army Corps of Engineers (USACE) for impacts to regulated Waters, including wetlands
- Section 401 of the CWA Water Quality Certification from the North Coast Regional Water Quality Control Board for impacts to regulated Waters, including wetlands
- Coastal Development Permits under the City of Trinidad Local Coastal Program and the Humboldt County Local Coastal Program
- Humboldt County Grading Permit

## **2. Regulatory Background**

The following is an overview of agencies that have potential oversight of the proposed Project related to biological resources. The regulatory setting is divided into sections on federal, state, and local jurisdiction.

### **2.1 Federal Jurisdiction**

#### **National Environmental Policy Act**

The National Environmental Policy Act (NEPA) of 1969 requires federal agencies to prepare environmental documentation that discloses to decision-makers and the interested public a clear, accurate description of potential environmental effects resulting from proposed federal actions and reasonable alternatives to those actions. Through NEPA, the U.S. Congress directed federal agencies to integrate environmental factors in their planning and decision-making processes and encourage and facilitate public involvement in decisions that affect the quality of the human environment. Federal agencies are required to consider the environmental effects of a Proposed Action, alternatives to the Proposed Action, and a No Action alternative (assessing the potential environmental effects of not undertaking the Proposed Action).

## Endangered Species Act

Section 9 of the federal ESA of 1973 prohibits acts of disturbance that result in the “take” of threatened or endangered species. As defined by the federal ESA, “endangered” refers to any species that is in danger of extinction throughout all or a significant portion of its current range. The term “threatened” is applied to any species likely to become endangered within the foreseeable future throughout all or a significant portion of its current range. Take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.”

Critical habitat is defined by the ESA as a specific geographic area containing features essential for the conservation of an endangered or threatened species. Under Section 7 of the ESA, critical habitat should be evaluated if designated for federally listed species that may be present in the project’s Action Area (federally designated term for a “Project Study Boundary”).

## Habitat Conservation Plans

Habitat Conservation Plans (HCPs) were incorporated into the ESA in 1982 (sections 10(a)(1)(B) and 10(a)(2)(A) of the ESA, as amended) to create a pathway for take exemptions under the Act for federal and non-federal entities (previously prohibited under Section 9 of the Act). HCPs are planning documents that provide measures to minimize or mitigate project impacts to listed or candidate species (as well as eagles, following 2011 guidance) at an ecosystem versus single-species level. A HCP provides a degree of assurance for private entities that measures agreed upon in the HCP by federal regulators and the entity would be upheld and not altered for the lifespan of the document, and no additional obligations (financial, land use, or other) would be required at a later date with respect to the species covered in the HCP (referred to as the “No Surprises Rule”; 63 FR 8859). Requirements for issuance of an HCP require that all take is incidental, take would be minimized and mitigated to the maximum extent practical, adequate funds are available to implement the plan, and the incidental take would not appreciably reduce the survival and recovery potential of the species, among others. HCPs are also must comply with the Five Point Policy (65 FR 35242) that requires the incorporation of biological goals and objectives for each species in the document, adaptive management, monitoring, a set time frame for implementation, and public participation through the NEPA process.

### ***Habitat Conservation Plans That Overlap the Project***

The PSB and BSA do not overlap any existing active or proposed HCPs according to a current list from the USFW ECOS website (USFWS 2022), and the CDFW list of HCPs and Natural Community Conservation Planning (NCCP)s (CDFW 2022a).

## Executive Order 13112, Invasive Species

Executive Order 13112 was issued in 1999 to enhance federal coordination and response to the complex and accelerating problem of invasive species. It provides policy direction to promote coordinated efforts of federal, state, and local agencies in monitoring, detecting, preventing, evaluating, managing, and controlling the spread of invasive species and increasing the effectiveness of scientific research and public outreach affecting the spread and impacts of invasive species.

## Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-712) as amended established federal responsibilities for the protection of nearly all species of birds, their eggs, and nests. A migratory bird is

defined as any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. The MBTA prohibits the take, possession, buying, selling, purchasing, or bartering of any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Only exotic species such as Rock Pigeons (*Columba livia*), House Sparrows (*Passer domesticus*), and European Starlings (*Sturnus vulgaris*) are exempt from protection.

## Clean Water Act

The objective of the CWA of 1977, as amended, is to maintain and restore the chemical, physical, and biological integrity of the nation's waters. Discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands, is regulated under Section 404 of the CWA by the USACE via a permitting process. Applicants for Section 404 permits are also required to obtain water quality certification through the State (State Water Resources Control Board [SWRCB] or Regional Water Quality Control Board [RWQCB]) under Section 401 of the CWA.

## Executive Order 11990

Executive Order 11990 (1977) furthers the protection of wetlands under NEPA through avoidance of long and short-term adverse impacts associated with the destruction or modification of wetlands where practicable. The order requires all federal agencies managing federal lands, sponsoring federal projects, or funding state or local projects to assess the effects of their actions on wetlands. The agencies are required to follow avoidance, mitigation, and preservation procedures. The Presidential Wetland Policy of 1993 and subsequent reaffirmation of the policy in 1995 supports effective protection and restoration of wetlands, while advocating for increased fairness of federal regulatory programs.

## Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) was originally enacted in 1940 in order to protect the national emblem of the United States, the Bald Eagle (*Haliaeetus leucocephalus*). At this time, the Bald Eagle was experiencing significant population pressures from hunting, egg collection, and habitat loss (Buehler 2000). This act was expanded upon in 1962 to include protections for the Golden Eagle (*Aquila chrysaetos*).

The BGEPA prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Regulations further define "disturb" as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 CFR 22.6).

In addition to immediate impacts, this definition also covers effects that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

Regulations for permitting take of Bald Eagles or Golden Eagles (50 CFR 22) provide information on eagle permits for "the taking, possession, and transportation within the United States of Bald Eagles and Golden

Eagles and their parts, nests, and eggs for scientific, educational, and depredation control purposes; for the religious purposes of American Indian tribes; and to protect other interests in a particular locality.

## **2.2 State Jurisdiction**

### **California Environmental Quality Act (CEQA)**

CEQA applies to certain activities of state and local public agencies. A public agency must comply with CEQA when it undertakes an activity defined by CEQA as a "project." A project is an activity undertaken by a public agency or a private activity which must receive some discretionary approval. Under CEQA, a variety of technical studies including biological, cultural, traffic, and air quality studies as well as research and professional knowledge are considered to determine whether the project may have an "adverse effect" on the environment. Lead agencies are charged with evaluating the best available data when determining what specifically should be considered an "adverse effect" to the environment.

### **Porter-Cologne Water Quality Act**

The Porter-Cologne Act provides for statewide coordination of water quality regulations by establishing the California State Water Resources Control Board (SWRCB). The SWRCB is the statewide authority that oversees nine separate RWQCBs that collectively oversee water quality at regional and local levels. California RWQCBs issue CWA Section 401 Water Quality Certifications for possible pollutant discharges into waters of the U.S. or State. The North Coast Regional Water Quality Control Board (NCRWQCB) may also regulate riparian areas as important buffers that prevent discharge and other negative impacts to Waters of the State.

### **California Endangered Species Act**

The CESA includes provisions for the protection and management of species listed by the State of California as endangered, threatened, or designated as candidates for such listing (California Fish and Game Code (FGC) Sections 2050 through 2085). The CESA generally parallels the main provisions of the ESA and is administered by the CDFW, who maintains a list of state threatened and endangered species as well as candidate species. The CESA prohibits the "take" of any species listed as threatened or endangered unless authorized by the CDFW in the form of an Incidental Take Permit. Under FGC, "take" is defined as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

### **Other State Special Status Species and Communities**

The CDFW maintains a list of Species of Species Concern (SSC). These are broadly defined as species that are of concern to the CDFW because of population declines and restricted distributions, and/or they are associated with habitats that are declining in California. The criteria used to define special status species are described by the CDFW. Impacts to special status plants, animals, and sensitive natural communities may be considered significant under CEQA.

State SSC include those plants and wildlife species that have not been formally listed yet are proposed or may qualify as endangered or threatened. In addition, United States Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special status invertebrates are considered special status species by CDFW.

## Sensitive Natural Communities

Natural vegetation communities listed as Sensitive in the California Natural Diversity Database (CNDDDB) and on the SNCs List are to be addressed within the CEQA review process (CDFW 2022b). SNCs are primarily classified according to A Manual of California Vegetation (Sawyer et al. 2009). Legacy SNCs are listed in CNDDDB according to the Holland classification system (1986), and Holland types may be used when a current alliance-level classification does not exist (CDFW 2022b). CDFW considers alliances with a NatureServe State Rank of S1 to S3 to be SNCs. Associations currently designated as being of S3 or rare are considered sensitive by CDFW even if State ranks have not been determined. Sensitive alliances and associations are considered during the CEQA process (CDFW 2022b). The application of ranking for determination of SNCs is summarized as follows in **Table 1** (NatureServe 2022):

**Table 2.1 NatureServe Conservation Status Ranks for Sensitive Natural Communities (SNCs)**

Name	Calculated Status Rank	Status Description
Score ≤ 1.5	G1, N1, S1	Critically Imperiled
1.5 ≤ Score ≤ 2.5	G2, N2, S2	Imperiled
2.5 ≤ Score ≤ 3.5	G3, N3, S3	Vulnerable
3.5 ≤ Score ≤ 4.5	G4, N4, S4	Apparently Secure
Score > 4.5	G5, N5, S5	Secure

## Environmentally Sensitive Habitat Areas

ESHAs are defined by the Coastal Act as follows:

*“Environmentally sensitive area” means any area in which plant or animal life or their habitats are either 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. (Pub. Resources Code, § 30107.5)*

The Coastal Act’s designation of ESHA generally includes vegetation alliances listed in CDFW’s California SNCs List with an S1- S3 ranking, or may include those communities designated as “sensitive” by CDFW. The Coastal Act’s ESHA category is broadly defined, and it also includes habitat for special-status species, wetlands, riparian areas, and other areas that provide important ecosystem functions (CCC 2013). While there is not a specific list of habitats considered to be ESHA for the State or County, the California Coastal Commission (CCC) through the Coastal Act and counties or municipalities through the Local Coastal Programs are the jurisdictional agencies that exert authority in identifying and protecting ESHAs in the course of project activities (see Section 2.3 for local regulatory information pertaining to this Project under the Coastal Act).

Section 30240 of the Coastal Act includes language intended to protect ESHA:

*Section 30240.*

- a. Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.*
- b. 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.*

## California Fish and Game Code

### **Natural Community Conservation Planning Act**

The Natural Community Conservation Act (Sections 2800-2835 of the FGC, as amended) is administered by the CDFW through their NCCP program. The program involves broad-based conservation planning for regions (multispecies and multihabitat coverage that serve as an alternative to project-by-project mitigation), while allowing for compatible economic activity and development. The Act's conservation requirements are more stringent than existing state and federal requirements for mitigation, as it requires that plan preparers actively participate in the recovery of sensitive species and habitats (while conserving ecosystem function, biological diversity, and ecological integrity of habitats). NCCPs are developed in coordination with landowners, regulatory agencies (including the USFWS and National Marine Fisheries Service [NMFS], as appropriate), and environmental organizations. The purpose of NCCPs is to provide a clear framework for project proponents to avoid, minimize, and mitigate impacts to sensitive resources within the coverage area of the NCCP and allow for an adaptive management approach to conservation. NCCPs and HCPs are often combined into one planning document for particular geographic regions of California.

#### ***Natural Community Conservation Plans that Overlap the PSB***

The PSB and BSA do not overlap any existing NCCPs (CDFW 2022a).

### **Native Plant Protection Act**

The CDFW administers the Native Plant Protection Act (Sections 1900–1913 of the FGC). These sections allow the California Fish and Game Commission to designate endangered and rare plant species and to notify landowners of the presence of such species. Plant species on California Native Plant Society's (CNPS) California Rare Plant Ranking (CRPR) Lists 1 and 2 are considered eligible for state listing as Endangered or Threatened pursuant to the California FGC and 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. CRPR List 3 and 4 plants may warrant protection under CEQA Guidelines 15380 only in special circumstances. CDFW publishes and periodically updates lists of special status species which include, for the most part, the above categories. Additionally, there are a total of 64 plant species designated as "rare" in California, which is a special designation created before plants were rolled into CESA in the 1980s. The CESA and the Native Plant Protection Act (NPPA) required a project to have a "Scientific, Educational, or Management Permit" from CDFW for activities that would result in "take," possession, import, or export of state-listed plant species including research, seed banking, reintroduction efforts, habitat restoration, and other activities relating to any plant designated SE (State endangered), ST (State threatened), SR (State rare), or SC (State candidate for listing).

### **Birds of Prey and Native Nesting Birds**

Sections 3503 and 3513 of the FGC prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 specifically prohibits the take, possession, or destruction of any birds in the orders Falconiformes (hawks and eagles) or Strigiformes (owls) and their eggs or nests. These provisions, along with the federal MBTA, essentially serve to protect nesting native birds. Non-native species, including the European Starling, Rock Dove, and House Sparrow, are not afforded protection under the MBTA or FGC.

## Fully Protected Species

The CDFW enforces the FGC, which provides protection for “fully protected birds,” (Section 3511), “fully protected mammals” (Section 4700), “fully protected reptiles and amphibians” (Section 5050), and “fully protected fish” (Section 5515). As fully protected species, the CDFW cannot authorize any project or action that would result in “take” of these species, even with an incidental take permit.

## Migratory Bird Protection Act (MBPA)

The California Migratory Bird Protection Act (MBPA; FGC Section 3513, as amended) was introduced in the California State Assembly 2019 by Assembly Member Ash Kalra and co-sponsored by the National Audubon Society. The text of the Act specifies that it is unlawful to take or possess any migratory nongame bird as designated in the federal Migratory Bird Treaty Act (16 USC 703-712) before January 1, 2017. This upholds the interpretation of the MBTA under Clinton’s EO 13166, where “take” was defined as both “unintentional as well as intentional.” Governor Gavin Newsom signed the Act into law on September 27, 2019. The MBPA effectively closes the federal MBTA loophole on incidental take of migratory birds in California.

## 2.3 Local Jurisdiction

The PSB is entirely within the California Coastal Zone. The portion of the PSB in the Westhaven Drive area is in the jurisdiction of the Humboldt County LCP. The Trinidad Area Plan (2014) is the Land Use Plan for this area, and the Humboldt County Zoning Code is the Implementation Plan.

The portion of the PSB in the area of Edwards and Van Wycke Street is in the jurisdiction of the City of Trinidad LCP. The City of Trinidad’s General Plan (1978) is the Land Use Plan for the City’s LCP, and the Implementation Plan consists of the zoning, grading, building and subdivision ordinances.

### Trinidad Area Plan

The Trinidad Area Plan (revised in 2014) includes the following relevant codes:

*30233. (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

*(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

*30236 (d) Riparian corridors on all perennial and intermittent streams shall be, at a minimum, the larger of the following:*

*(1) 100 feet, measured as the horizontal distance from the stream transition line on both sides.*

*(2) 50 feet plus four times the average percent of slope, measured as a slope distance from the stream transition line on both sides of intermittent and perennial streams.*

*(3) Where necessary, the width of riparian corridors shall be expanded to include significant areas of riparian vegetation adjacent to the corridor, slides, and areas with visible evidence of slope instability, not to exceed 200 feet measured as a horizontal distance.*

*30240 (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.*



*Environmentally sensitive habitats within the County Trinidad Planning Area shall include:*

- *Rivers, creeks and associated riparian habitats*
- *Offshore rocks, islands and intertidal areas*
- *Other critical habitats for rare or endangered species listed on state or federal lists*
- *Wetlands. No wetlands are currently identified.*

## City of Trinidad General Plan

The City of Trinidad General Plan (CoT 1978) includes the following relevant sections:

### **Biological Resources**

*Riparian vegetation is located along portions of all the coastal streams in the planning area. This vegetation protects the quality of the water, minimizes soil erosion and slippage, and provides a valuable habitat for a wide variety of animals and birds. Four types of rare plants are found in the planning area. The boundary of the areas where these plants are found has not been established.*

### **Development Constraints**

*Riparian vegetation should be disturbed as little as possible. Development on sites where rare plants are known to exist should be located and designed to minimize the impact on the rare plants...*

### **Recommended Land Use**

*Areas within 100 feet of streams near developed lands are placed in the Open Space or Special Environment categories to establish a riparian protection zone. Riparian habitat along streams in timber management areas has been designated Resource Production. The Forest Practices Act provides for the retention of streamside vegetation while allowing careful removal of merchantable timber.*

### **Recommended policies**

- *The Humboldt County Natural Resources Department should define the geographical limits of the three rare plants<sup>1</sup> located within potential development areas. Vegetation removal, timber harvesting, or development should be reviewed to ensure that all reasonable means have been considered to protect any existing rare plants.*

## 3. Environmental Baseline Conditions

### 3.1 Habitat Elements

The portion of the PSB in the City of Trinidad is largely residentially developed and landscaped areas with a border of coastal scrub on the south side of Van Wycke Street and the eastern end of Edwards Street. This portion of the PSB is closest to the coast and is approximately 85 - 180 feet above sea level (**Appendix A, Figure 2-1**).

The portion of the PSB along Westhaven Drive includes the eastern road shoulder in North Coast coniferous forest with low density residential development. The new water tank and pipeline along the

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<sup>1</sup> The three rare plants of concern are not identified in the General Plan. These plants are discussed in a separate Environmental Conditions and Constraints Report.

access road will be installed approximately 840 feet northeast of Westhaven Drive (**Appendix A, Figure 2-2**).

## 3.2 Topography and Soils

The PSB is on a gradual slope in the City of Trinidad and along a slightly undulating road and forested slope in the community of Westhaven. The elevation of the entire PSB ranges between approximately 85 to 390 feet in elevation above sea level. Soils include Megwil and Cannonball soils, 0 to 5 percent slopes (38.5% of the PSB), Atwell-Ladybird complex, 30 to 50 percent slopes (29.0% of the PSB), Lepoil-Espa-Candymountain complex, 15 to 50 percent slopes (9.8% of the PSB), Candymountain, 30 to 75 percent slopes (12.3% of the PSB), and Halfbluff-Tepona-Urban Land, 2 to 9 percent slopes (10.4% of the PSB) (see the Trinidad Water System Wetland Delineation Report for more details, USDA 2022). All soils in the PSB are well drained or moderately well drained, and none are rated as hydric soils. The depth to the water table is generally between 20 and 59 inches except for Candymountain soils in the southeastern portion of Trinidad City where the depth to the water table is greater than 80 inches.

## 3.3 Hydrology

GHD delineated wetlands within the PSB on October 18 and 19, 2022 and findings are documented in a separate report (GHD 2022). Mean annual precipitation in the Project Area ranges from 35 to 90 inches (USDA 2022). Rainfall in the 2022 water year at the Arcata Eureka Airport totaled 32.47 inches which was below normal (46.25 inches).

The perennial Deadman's Creek flows through a culvert underneath the PSB on Westhaven Drive (USFWS 2018, **Appendix A, Figure 2-2**). The perennial Luffenholtz Creek is approximately 210 feet southeast of the PSB on Westhaven Drive as mapped by the USFWS National Wetlands Inventory. The PSB in the City of Trinidad is within 135 horizontal feet and 80 vertical feet of the Pacific Ocean (**Appendix A, Figure 2-1**).

## 3.4 Habitat Access, Connectivity, and Migratory Corridors

The PSB and BSA are located within the Pacific Flyway for migratory birds. There is a birding "hotspot" within 300 feet of the northern section of the BSA, where 158 species have been observed (eBird 2022). The PSB is approximately 8 miles from the nearest "essential connectivity area" and "natural landscape block" (CDFW 2022c). A "small natural landscape area" is approximately 800 feet from the northern section of the PSB and approximately one mile from the southern section of the PSB (CDFW 2022c). There are protected and recreational areas in proximity to the PSB, including Trinidad State Beach, Trinidad Head, and Little River State Beach. Due to the Project occurring primarily in residential areas with established roads, there would be no impact to the habitat access, connectivity, or migratory corridors of wildlife species.

# 4. Methods

## 4.1 Preliminary Investigation

### Database Searches (CNDDDB, CNPS, EFH, IPaC, NOAA Critical Habitat)

Database searches for sensitive plant and wildlife species that may occur in the Project vicinity were conducted by GHD in September to November 2022 (**Appendix B**). Database searches included the

CNDDDB Quick View (CDFW 2022d), CNPS Inventory of Rare and Endangered Vascular Plants (CNPS 2022), the National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat (EFH) Mapper (NOAA 2022a), the USFWS Information for Planning and Conservation (IPaC; USFWS 2022b), and the NOAA NMFS ESA Critical Habitat Mapper (NOAA 2022b). The NOAA Fisheries West Coast Region California Species List Tools is no longer publicly available; however, it was determined that other ESA threatened and endangered species regulated by NOAA Fisheries are unlikely to occur within the BSA (NOAA 2022c). The searches encompassed eight U.S. Geological Survey (USGS) quadrangles (quads) centered on the Project Area quad (Crannell) and the surrounding seven quads: Trinidad, Tyee City, Arcata North, Blue Lake, Panther Creek, Bald Hills, and Rodgers Peak.

Plant species on the CNPS California Rare Plant Ranking (CRPR) Lists 1 and 2 are considered eligible for state listing as endangered or threatened pursuant to the California Fish and Game Code. 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 Fish and Game Code.

CRPR List 3 and 4 plants may warrant protection under CEQA Guidelines 15380 only in special circumstances. CDFW publishes and periodically updates lists of special status species which include, for the most part, the above categories. Additionally, there are a total of 64 plant species designated as “rare” in California, which is a special designation created before plants were rolled into CESA in the 1980s. The CESA and the NPPA required a project to have a “Scientific, Educational, or Management Permit” from CDFW for activities that would result in “take,” possession, import, or export of state-listed plant species including research, seed banking, reintroduction efforts, habitat restoration, and other activities relating to any plant designated SE (State Endangered), ST (State Threatened), SR (State Rare), or SC (State Candidate for listing).

Scoping for special status plant species included any state or federally listed plants as well as plant species on CNPS CRPR Lists 1-4.

## 4.2 Field Surveys

### Special Status Plants

All special status plant species identified by database scoping were evaluated by for potential to occur in the PSB (**Table 1**). GHD botanist Jane Cipra conducted a site survey November 3, 2022, which is outside of the blooming season for the majority of special status plant species with potential to occur in the Project Area. A recommendation for pre-construction, seasonally appropriate floristic surveys is included in **Section 6**. A protocol level floristic survey did not occur at this time, however, identifiable species that were observed are listed in **Appendix D**. Nomenclature follows *The Jepson Manual* (Baldwin et al. 2012). April and June floristic surveys for special status plants following CDFW (2018) and USFWS (2002) protocols and guidelines will be required before construction.

Natural Communities and SNCs were identified using the Manual of California Vegetation, Second Edition (Sawyer et al. 2009). SNCs are vegetation Alliances or Associations with a state rarity rank of S1-S3 and/or are on the List of California SNCs (CDFW 2022b).

Habitats were photo-documented onsite (**Appendix C**). Special status plants were mapped using points 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.

## Aquatic Resources

A delineation of aquatic resources (including wetlands) was completed October 18 and 19, 2022 by GHD Soil Scientist Kerry McNamee, and GHD Botanist Jane Cipra. See the separate Trinidad Water System Wetland Delineation Report (GHD 2022) prepared for the Project. The total area of three-parameter wetlands within the Project Area is 1,265 square feet. The total area of one-parameter wetlands within the Project Area is 4,480 square feet. The three parameter wetlands are within the jurisdiction of the USACE and the SWRCB, and the HCLCP. The one-parameter wetlands are only within the jurisdiction of the HCLCP.

## Wildlife Survey and Wildlife Habitat Evaluation Methods

A reconnaissance-level wildlife site visit was conducted by Sara Moriarty-Graves, GHD Wildlife Biologist (hereafter surveyor), on October 17, 2022, from 0730 to 1145. Weather during the survey included clear skies, about 59 degrees Fahrenheit, with calm air to light breeze (Beaufort scale 0-2).

Where private property access allowed, the surveyor walked within and along the PSB and BSA (**Appendix A, Figures 2-1 and 2-2**). Inaccessible areas within the surrounding 100 feet of the PSB and BSA were visually assessed from fixed locations with binoculars. Where access was possible and the habitat allowed for 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. This reconnaissance-level survey was conducted to identify general wildlife resources and habitat as well as wildlife activity in the BSA. No protocol-level surveys for special status wildlife were conducted.

# 5. Results

## 5.1 Summary of General Biological Resources

Based on occurrence records, field surveys, site visits, and habitat availability, five special status plant species and 22 special status wildlife species have a moderate to high potential to occur or are present in the PSB or BSA. Four SNCs were observed in the PSB including Red alder forest – salal association, Redwood forest and woodland, and Salal - berry brambles – California blackberry association (**Appendix A, Figures 3-1 and 3-2**).

Three bird species (Marbled Murrelet; *Brachyramphus marmoratus*, Bald Eagle, and Bank Swallow; *Riparia riparia*) that are federally-listed, state-listed (or both) have a moderate potential to occur based on recent detections in proximity to the BSA (eBird 2022). However, these species are unlikely to forage or nest within the BSA. In addition, three special status mammals, twelve other birds, four amphibians, and two fish species have a moderate to high potential to occur (**Table 4**). Recommendations to protect special status species are provided in **Section 6**.

## 5.2 Special Status Plants

### Special Status Plants and Sensitive Habitats

**Table 1** summarizes the potential for special status plants documented in the surrounding 9-quad area to occur within the PSB. No rare plants were observed in the site visit which occurred outside of the blooming season for most species. Protocol level surveys in April and June are required to determine rare plant presence, as recommended in **Section 6**. A list of all plants observed in the PSB is provided in **Appendix D**.

**Table 2 Potential for Special Status Plants to Occur in the PSB**

Scientific Name	Common Name	FESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	CRPR <sup>2</sup>	Habitat Requirements <sup>1</sup>	Potential to Occur in the PSB
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	None	None	G4G5T2	S2	1B.1	Coastal dunes	<b>No potential.</b> The PSB is outside of the elevational range for this species (0 - 35 feet).
<i>Angelica lucida</i>	sea-watch	None	None	G5	S3	4.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Astragalus rattanii</i> var. <i>rattanii</i>	Rattan's milk-vetch	None	None	G4T4	S4	4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest, Gravelly, Streambanks	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Astragalus umbraticus</i>	Bald Mountain milk-vetch	None	None	G4	S2	2B.2	Cismontane woodland, Lower montane coniferous forest, Roadsides (sometimes)	<b>No potential.</b> The PSB is outside of the elevational range for this species (490 - 4,100 feet).
<i>Calamagrostis bolanderi</i>	Bolander's reed grass	None	None	G4	S4	4.2	Bogs and fens, Broadleafed upland forest, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Mesic	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Cardamine angulata</i>	seaside bittercress	None	None	G4G5	S3	2B.2	Lower montane coniferous forest, North Coast coniferous forest, Streambanks	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Carex arcta</i>	northern clustered sedge	None	None	G5	S1	2B.2	Bogs and fens, North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Carex buxbaumii</i>	Buxbaum's sedge	None	None	G5	S3	4.2	Bogs and fens, Marshes and swamps, Meadows and seeps	<b>No potential.</b> No suitable habitat is present in the PSB.
<i>Carex lenticularis</i> var. <i>limnophila</i>	lagoon sedge	None	None	G5T5	S1	2B.2	Bogs and fens, Marshes and swamps, North Coast coniferous forest, Gravelly (often)	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Carex leptalea</i>	bristle-stalked sedge	None	None	G5	S1	2B.2	Bogs and fens, Marshes and swamps, Meadows and seeps	<b>No potential.</b> No suitable habitat is present in the PSB.
<i>Carex lyngbyei</i>	Lyngbye's sedge	None	None	G5	S3	2B.2	Marshes and swamps	<b>No potential.</b> The PSB is outside of the elevational range for this species (0 - 35 feet).

Scientific Name	Common Name	FESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	CRPR <sup>2</sup>	Habitat Requirements <sup>1</sup>	Potential to Occur in the PSB
<i>Carex saliniformis</i>	deceiving sedge	None	None	G2	S2	1B.2	Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, Mesic	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Carex viridula</i> ssp. <i>viridula</i>	green yellow sedge	None	None	G5T5	S2	2B.3	Bogs and fens, Marshes and swamps, North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Castilleja ambigua</i> var. <i>humboldtensis</i>	Humboldt Bay owl's-clover	None	None	G4T2	S2	1B.2	Marshes and swamps	<b>No potential.</b> The PSB is outside of the elevational range for this species (0 - 10 feet).
<i>Castilleja litoralis</i>	Oregon coast paintbrush	None	None	G3	S3	2B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Sandy	<b>Moderate potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street. There are three occurrences of this species in the Trinidad area from 1963 and 2018.
<i>Castilleja mendocinensis</i>	Mendocino Coast paintbrush	None	None	G2	S2	1B.2	Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes salty bird's-beak	None	None	G4?T2	S2	1B.2	Marshes and swamps	<b>No potential.</b> The PSB is outside of the elevational range for this species (0 - 35 feet).
<i>Chrysosplenium glechomifolium</i>	Pacific golden saxifrage	None	None	G5?	S3	4.3	North Coast coniferous forest, Riparian forest, Roadsides (sometimes), Seeps (sometimes), Streambanks	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Coptis laciniata</i>	Oregon goldthread	None	None	G4?	S3?	4.2	Meadows and seeps, North Coast coniferous forest, Mesic	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Discelium nudum</i>	naked flag moss	None	None	G4G5	S1	2B.2	Coastal bluff scrub	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Eleocharis parvula</i>	small spikerush	None	None	G5	S3	4.3	Marshes and swamps	<b>No potential.</b> No suitable habitat is present in the PSB.
<i>Empetrum nigrum</i>	black crowberry	None	None	G5	S1?	2B.2	Coastal bluff scrub, Coastal prairie	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street. This species was last observed in Trinidad in 1979.



Scientific Name	Common Name	FESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	CRPR <sup>2</sup>	Habitat Requirements <sup>1</sup>	Potential to Occur in the PSB
<i>Erysimum menziesii</i>	Menzies' wallflower	FE	SE	G1	S1	1B.1	Coastal dunes	<b>No potential.</b> No suitable habitat is present in the PSB.
<i>Erythronium oregonum</i>	giant fawn lily	None	None	G5	S2	2B.2	Cismontane woodland, Meadows and seeps, Openings, Rocky, Serpentinite (sometimes)	<b>No potential.</b> No suitable habitat is present in the PSB.
<i>Erythronium revolutum</i>	coast fawn lily	None	None	G4G5	S3	2B.2	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest, Mesic, Streambanks	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Fissidens pauperculus</i>	minute pocket moss	None	None	G3?	S2	1B.2	North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	None	None	G5T3	S2	1B.2	Chaparral, Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Gilia millefoliata</i>	dark-eyed gilia	None	None	G2	S2	1B.2	Coastal dunes	<b>No potential.</b> No suitable habitat is present in the PSB.
<i>Glehnia littoralis</i> ssp. <i>leiocarpa</i>	American glehnia	None	None	G5T5	S2S3	4.2	Coastal dunes	<b>No potential.</b> The PSB is outside of the elevational range for this species (0 - 65 feet).
<i>Hemizonia congesta</i> ssp. <i>tracyi</i>	Tracy's tarplant	None	None	G5T4	S4	4.3	Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest, Openings, Serpentinite (sometimes)	<b>No potential.</b> The PSB is outside of the elevational range for this species (395 - 3.935 feet).
<i>Hesperervax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	None	None	G4T3	S3	1B.2	Coastal bluff scrub, Coastal dunes, Coastal prairie	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Hosackia gracilis</i>	harlequin lotus	None	None	G3G4	S3	4.2	Broadleafed upland forest, Cismontane woodland, Closed-cone/North Coast coniferous forest, Coastal bluff scrub/prairie/scrub, Marshes, swamps, meadows, and seeps, Valley and foothill grassland, Roadsides	<b>Moderate potential.</b> Suitable habitat is present in the PSB along Van Wycke Street.

Scientific Name	Common Name	FESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	CRPR <sup>2</sup>	Habitat Requirements <sup>1</sup>	Potential to Occur in the PSB
<i>Iliamna latibracteata</i>	California globe mallow	None	None	G2G3	S2	1B.2	Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Riparian scrub, Burned areas (often)	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Juncus nevadensis</i> var. <i>inventus</i>	Sierra rush	None	None	G5T3T4	S1	2B.2	Bogs and fens	<b>No potential.</b> The PSB is outside of the elevational range for this species (0 - 35 feet).
<i>Kopsiopsis hookeri</i>	small groundcone	None	None	G4?	S1S2	2B.3	North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Lathyrus glandulosus</i>	sticky pea	None	None	G3	S3	4.3	Cismontane woodland	<b>No potential.</b> The PSB is outside of the elevational range for this species (985 - 2,625 feet).
<i>Lathyrus japonicus</i>	seaside pea	None	None	G5	S2	2B.1	Coastal dunes	<b>No potential.</b> No suitable habitat is present in the PSB.
<i>Lathyrus palustris</i>	marsh pea	None	None	G5	S2	2B.2	Bogs and fens, Coastal prairie/scrub, Lower montane/North Coast coniferous forest, Marshes and swamps, Mesic	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Layia carnosa</i>	beach layia	FT	SE	G2	S2	1B.1	Coastal dunes, Coastal scrub	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Lilium occidentale</i>	western lily	FE	SE	G1G2	S1	1B.1	Bogs and fens, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB.
<i>Listera cordata</i>	heart-leaved twayblade	None	None	G5	S4	4.2	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Lycopodiella inundata</i>	inundated bog-clubmoss	None	None	G5	S1	2B.2	Bogs and fens, Lower montane coniferous forest, Marshes and swamps	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Lycopodium clavatum</i>	running-pine	None	None	G5	S3	4.1	Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest, Edges (often), Openings, Roadsides	<b>Moderate potential.</b> Suitable habitat is present in the PSB. A CNDDB occurrence (from 1959) overlaps the PSB in the City of Trinidad, and other occurrence (from 2001) are within 1.0 mile of the water tank location.

Scientific Name	Common Name	FESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	CRPR <sup>2</sup>	Habitat Requirements <sup>1</sup>	Potential to Occur in the PSB
<i>Lycopus uniflorus</i>	northern bugleweed	None	None	G5	S4	4.3	Bogs and fens, Marshes and swamps	<b>No potential.</b> No suitable habitat is present in the PSB.
<i>Mitellastrum caulescens</i>	leafy-stemmed mitrewort	None	None	G5	S4	4.2	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Mesic, Roadsides (sometimes)	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Moneses uniflora</i>	woodnymph	None	None	G5	S2	2B.2	Broadleafed upland forest, North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Monotropa uniflora</i>	ghost-pipe	None	None	G5	S2	2B.2	Broadleafed upland forest, North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Montia howellii</i>	Howell's montia	None	None	G3G4	S2	2B.2	Meadows and seeps, North Coast coniferous forest, Vernal pools, Roadsides (sometimes), Vernal Mesic	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Oenothera wolfii</i>	Wolf's evening-primrose	None	None	G2	S1	1B.1	Coastal bluff scrub/dunes/prairie, Lower montane coniferous forest, Mesic (usually), Sandy	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	None	None	G4T4	S2S3	2B.2	Coastal scrub, North Coast coniferous forest, Roadsides (sometimes)	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Piperia candida</i>	white-flowered rein orchid	None	None	G3?	S3	1B.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Serpentine (sometimes)	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Pityopsis californicus</i>	California pinefoot	None	None	G4G5	S4	4.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest, Mesic	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Pleuropogon refractus</i>	nodding semaphore grass	None	None	G4	S4	4.2	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest, Mesic	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.

Scientific Name	Common Name	FESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	CRPR <sup>2</sup>	Habitat Requirements <sup>1</sup>	Potential to Occur in the PSB
<i>Polemonium carneum</i>	Oregon polemonium	None	None	G3G4	S2	2B.2	Coastal prairie, Coastal scrub, Lower montane coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Ribes laxiflorum</i>	trailing black currant	None	None	G5?	S3	4.3	North Coast coniferous forest, Roadsides (sometimes)	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Romanzoffia tracyi</i>	Tracy's romanzoffia	None	None	G4	S2	2B.3	Coastal bluff scrub, Coastal scrub, Rocky	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	None	None	G3	S3	4.2	Broadleafed upland forest, Coastal prairie/scrub, North Coast coniferous forest, Riparian woodland, Disturbed areas (often)	<b>Moderate potential.</b> Suitable habitat is present throughout the PSB.
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	None	None	G5T2	S2	1B.2	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest, Roadsides (often)	<b>Moderate potential.</b> Suitable habitat is present throughout the PSB.
<i>Sidalcea oregana</i> ssp. <i>eximia</i>	coast checkerbloom	None	None	G5T1	S1	1B.2	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.
<i>Silene scouleri</i> ssp. <i>scouleri</i>	Scouler's catchfly	None	None	G5T4T5	S2S3	2B.2	Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Sulcaria spiralifera</i>	twisted horsehair lichen	None	None	G3G4	S2	1B.2	Coastal dunes, North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Tiarella trifoliata</i> var. <i>trifoliata</i>	trifoliolate laceflower	None	None	G5T5	S2S3	3.2	Lower montane coniferous forest, North Coast coniferous forest, Edges, Streambanks	<b>No potential.</b> The PSB is outside of the elevational range for this species (560 - 4,920 feet).
<i>Trichodon cylindricus</i>	cylindrical trichodon	None	None	G4G5	S2	2B.2	Broadleafed upland forest, Meadows and seeps, Upper montane coniferous forest, Roadsides, Sandy	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.
<i>Usnea longissima</i>	Methuselah's beard lichen	None	None	G4	S4	4.2	Broadleafed upland forest, North Coast coniferous forest	<b>Low potential.</b> Marginally suitable habitat is present in the PSB near Westhaven Drive.

Scientific Name	Common Name	FESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	CRPR <sup>2</sup>	Habitat Requirements <sup>1</sup>	Potential to Occur in the PSB
<i>Viola palustris</i>	alpine marsh violet	None	None	G5	S1S2	2B.2	Bogs and fens, Coastal scrub	<b>Low potential.</b> Marginally suitable habitat is present in the PSB along Van Wycke Street.

#### **Footnotes:**

<sup>1</sup> General habitat, and microhabitat column information, reprinted from CNDDDB (April 2022).

<sup>2</sup> Rankings from CNDDDB (April 2022).

#### **Column Header Categories and Abbreviations:**

**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.

**GRank:** 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 2022e); ? = “ 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 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.

**CRPR:** CNPS rankings for rare plants (CNPS 2022) - 1A = Plants presumed extinct in California; 1B = Plants rare, threatened or endangered in California and elsewhere; 2 = 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 2022e).

#### **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 on in the PSB
- Present:** Detected or documented on-site.

## 5.2.1 Special Status Plants with Moderate Potential to Occur

Botanical species with a moderate or higher potential to occur in the PSB are evaluated in further detail below.

### **Oregon coast paintbrush (*Castilleja littoralis*) CRPR 2B.2**

There is one historic occurrence of this species in the Trinidad area from 1963 and two occurrences from 2018. Suitable habitat for this perennial hemiparasitic herb includes sandy soils in coastal bluff scrub, coastal dunes, and coastal scrub. Marginally suitable habitat is present in the PSB on the south side of Van Wycke Street where moderately impacted coastal scrub is present. This species could be encountered.

### **Harlequin lotus (*Hosackia gracilis*) CRPR 4.2**

This species is not mapped in CNDDB, but this species is present in the Trinidad USGS quad according to the CNPS inventory of rare plants (CNPS 2022). Suitable habitat for this perennial rhizomatous herb includes broadleafed upland forest, cismontane woodland, closed-cone and North Coast coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes, swamps, meadows, and seeps, valley and foothill grassland, and roadsides. Roadsides in North Coast coniferous forest and coastal scrub are present in all areas of the PSB. This species could be encountered.

### **Maple-leaved checkerbloom (*Sidalcea malachroides*) CRPR 4.2**

The nearest CNDDB occurrences of this species are in the town of McKinleyville (from 1934) and east of the town of Blue Lake (from 2001). Suitable habitat for this perennial herb includes broadleafed upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, riparian woodland, and disturbed areas (often). Disturbed areas in coastal scrub and North Coast coniferous forest are present throughout the PSB. This species could be encountered.

### **Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) CRPR 1B.2**

The nearest CNDDB occurrences of this species are in the town of McKinleyville (from 2005). Suitable habitat for this perennial rhizomatous herb includes coastal bluff scrub, coastal prairie, North Coast coniferous forest, and roadsides (often). Disturbed areas in coastal scrub and North Coast coniferous forest are present throughout the PSB. This species could be encountered.

### **California globe mallow (*Iliamna latibracteata*) CRPR 1B.2**

The nearest CNDDB occurrence (from 2016) is approximately 15 miles northeast of the PSB. Suitable habitat for this perennial herb includes chaparral, lower montane coniferous forest, North Coast coniferous forest, riparian scrub, and burned areas (often). North Coast coniferous forest and some riparian scrub are present in the PSB along Westhaven Drive and this species could be encountered.

### **Woodnymph (*Moneses uniflora*) CRPR 2B.2**

The nearest CNDDB occurrence of this species (from 2012) is approximately 11 miles north of the PSB. Suitable habitat for this perennial rhizomatous herb includes broadleafed upland forest, and North Coast coniferous forest, which is present in the PSB along Westhaven Drive. This species could be encountered.



## Running-pine (*Lycopodium clavatum*) CRPR 4.1

There is one historic CNDDDB occurrence (from 1959) in the City of Trinidad, and three occurrences (from 2001) within 1 mile of Westhaven Drive. Suitable habitat for this perennial rhizomatous herb includes edges (often), openings, and roadsides in lower montane coniferous forest, North Coast coniferous forest, marshes, and swamps. Suitable habitat is present throughout the PSB but particularly along Westhaven Drive.

## 5.3 Sensitive Natural Communities and Riparian Habitat

A database query of CNDDDB returned five terrestrial communities in the nine USGS quads surrounding the Project location: Coastal and Valley Freshwater Marsh, Northern Coastal Salt Marsh, Northern Foredune Grassland, Sitka Spruce Forest, and Sphagnum Bog (**Table 3**). None of these communities are present in the PSB. A handful of Sitka spruce (*Picea sitchensis*) trees are present on Westhaven Drive; however, these trees are included in the Redwood forest alliance (*Sequoia sempervirens*).

Aside from the communities listed in CNDDDB, there are three SNCs present in the PSB: Red alder forest – salal association (*Alnus rubra* / *Gaultheria shallon*), Redwood forest and woodland, and Salal – berry brambles – California blackberry association (*Gaultheria shallon* – *Rubus [ursinus]*) (**Appendix A, Figures 3-1 and 3-2, Appendix E**). These SNCs may also be considered ESHAs in the Coastal Zone.

**Table 3 Vegetation Alliances and Associations in the Project Area and PSB**

Alliance	Association(s)	G Rank	S Rank	Sensitive
Red alder	Red alder / salal ( <i>Alnus rubra</i> / <i>Gaultheria shallon</i> )			Yes
	No association	G5	S4	No
Redwood forest and woodland	Red alder / salmonberry ( <i>Alnus rubra</i> / <i>Rubus spectabilis</i> )	G3	S3	Yes
	Douglas fir / salal ( <i>Pseudotsuga menziesii</i> / <i>Gaultheria shallon</i> )			
	Douglas fir / huckleberry ( <i>Pseudotsuga menziesii</i> / <i>Vaccinium ovatum</i> )			
	Swordfern ( <i>Polystichum munitum</i> )			
Salal – berry brambles	California blackberry ( <i>Rubus ursinus</i> )	GNR	S4	Yes

### Red Alder Forest

Small stands of Red alder forest are present surrounding the existing water tanks, along Westhaven Drive and on the slope below Van Wycke Street (**Appendix A, Figures 3-1 and 3-2**). Red alder forest is defined by more than 50% cover of red alder in the tree layer with co-dominants including grand fir (*Abies grandis*), Sitka spruce, Douglas fir, redwood, and/or hemlock (*Tsuga heterophylla*) as co-dominants in the tree canopy. In the area of Deadman’s Creek the Red alder forest is associated with salal in the understory which. This combination is considered sensitive and may also be considered an ESHA in the Coastal Zone. In the water tank area and on the slope below Van Wycke Street, the Red alder forest does not have an association with salal and is therefore not considered sensitive and would not be considered an ESHA.

## Redwood Forest and Woodland

The majority of the PSB on and around Westhaven Drive is in second growth Redwood forest and woodland with four possible associations: red alder / salmonberry, Douglas fir / salal, Douglas fir / huckleberry, and swordfern (**Appendix A, Figure 3-2**). The Redwood forest and woodland alliance was not mapped on the association level since the alliance and all associations are considered sensitive and all may be also considered ESHAs in the Coastal Zone. The Redwood forest alliance with red alder / salmonberry association intergrades with the Red alder alliance in the PSB.

## Salal – Berry Brambles

There is a stand of the Salal-berry brambles alliance with a California blackberry association present on the slope below Van Wycke Street in the City of Trinidad (**Appendix A, Figure 3-1**). This alliance is characterized by having salal or California blackberry dominant in the shrub canopy. When California blackberry is the only dominant species, the association is considered sensitive by CDFW and may also be considered an ESHA in the Coastal Zone.

## Riparian Habitat

There is one section of Red alder forest near the center of the PSB on Westhaven Drive that is also riparian habitat regulated by the NCRWQCB and the CCC (**Appendix A, Figure 4**). This stand of alder is approximately 80 feet wide and occurs on either side of Deadman's Creek, which flows through a culvert underneath Westhaven Drive. According to the definition of "riparian corridor" in the Trinidad Area Local Coastal Plan, this riparian area includes an additional 100 feet on either side beyond the dripline of the riparian vegetation and is approximately 280 feet wide.

Red alder trees overhang the PSB on the road shoulder; however, no tree removal is planned in this area and no impacts are expected to the riparian corridor (**Appendix C, Photo C-8**).

## 5.4 Special Status Wildlife

Habitat availability and suitability was determined for each species reported by the databases mentioned above (**Appendix B**). Nomenclature for special-status animals conforms to CDFW guidelines (CDFW 2022d). The potential for each species to occur was determined based on habitat evaluations during the site visit and available data (see **Table 4**).

### Special Status Wildlife Species

#### Federally-listed Wildlife Species

Fourteen federally-listed species (including three endangered and 11 threatened) that are regulated by the USFWS and NMFS under the ESA were identified during scoping in the vicinity of the PSB (i.e., the 9-quad search area; **Appendix A, Table 4**). Additionally, three federal candidate species were identified during database scoping. Based on habitat evaluations, and a database and literature review, it was determined that three endangered, ten threatened, and three candidate species are unlikely to occur in the PSB or BSA. One federally-threatened bird species (Marbled Murrelet) has been detected within close proximity of the BSA and have a moderate to high potential to occur. However, the species is more likely to fly over the BSA in the town of Trinidad (**Appendix A, Figure 2-1**). Additionally, the other section of the BSA along Westhaven Drive, the access road, and the water tanks (**Appendix A, Figure 2-2**) does not provide highly suitable nesting habitat for the Marbled Murrelet. Explanation of determinations is provided in **Table 4**.

## State Listed or Special Status Wildlife Species

Eleven state-listed wildlife species (including six endangered and five threatened) that are regulated by the CDFW under the CESA were identified during scoping in the vicinity of the PSB (i.e., the 9-quad search area). Additionally, one state candidate was identified during database scoping. Eight of these species are also federally-listed or candidates for listing. The PSB does not contain suitable habitat to support four of the state-endangered species, four of the state-threatened species, and the one state candidate species. Two state-endangered species (Bald Eagle and Marbled Murrelet) and one state-threatened species (Bank Swallow) have a moderate to high potential to occur within or nearby the BSA. However, these species are more likely to fly over the BSA than utilize habitat within either sections of it for nesting or foraging.

In addition to the federally and state-listed species, 45 other special status species were identified during scoping in the vicinity of the PSB (i.e., the nine-quad search area). This includes animals on the CDFW Special Animals List (SAL), on the CDFW Watch List (WL), or CDFW Fully Protected (FP) species. Three special status mammals, 12 other birds, four amphibians, and two fish species have a moderate to high potential to occur (**Table 4**).

## Wildlife Species Observed On-site

Various wildlife species were observed within the PSB during the October 18, 2022, reconnaissance-level site visit. One special status bird species (California Brown Pelican; *Pelecanus occidentalis*) was observed flying over the BSA. Tables of all wildlife species detected during the site visit are presented in **Tables F1** and **F3 (Appendix F)**. **Table F2** is a list of avian breeding codes, associated bird behaviour, and breeding status. **Tables F1** and **F3** are not intended to be comprehensive lists of all species that could occur within the PSB as no protocol level surveys have been conducted.

**Table 4 Potential for Special Status Wildlife to Occur in the PSB and BSA**

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
<b>Mammals</b>								
<i>Antrozous pallidus</i>	Pallid Bat	None	None	G4	S3	BLM S-Sensitive, CDFW SSC-Species of Special Concern, IUCN LC-Least Concern, USFS S-Sensitive, WBWG H-High Priority	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	<b>Low potential.</b> Marginally suitable forested habitat available, but no rocky areas for roosting present.
<i>Aplodontia rufa humboldtiana</i>	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.	<b>Low potential.</b> Riparian forest habitat is only present in small sections of the BSA near Deadman's Creek, which crosses under the PSB. The BSA contains a mainly closed canopy. Soil around Deadman's Creek did not appear to be friable, which is a requirement for burrows.
<i>Arborimus albipes</i>	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.	<b>Moderate potential.</b> There is suitable alder and shrub habitat present within the BSA. Areas surrounding Deadman's Creek may be suitable.
<i>Arborimus pomo</i>	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 Sonoma County. In Douglas-fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionally take	<b>Low potential.</b> There is suitable forested habitat present within the BSA. However, the forest is dominated by redwood. Douglas fir is not abundant within the BSA, which is a required food source.

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
							needles of grand fir, hemlock or spruce.	
<i>Enhydra lutris nereis</i>	Southern Sea Otter	FT	None	G4T2	S2	CDFW_FP-Fully Protected   IUCN_EN-Endangered   MMC_SSC-Species of Special Concern	Aquatic; Protected deepwater coastal communities. Nearshore marine environments from about Ano Nuevo, San Mateo Co. to Point Sal, Santa Barbara Co. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	<b>No potential.</b> No suitable nearshore marine habitat present in the BSA.
<i>Erethizon dorsatum</i>	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 coniferous and mixed woodland habitat.	<b>Low potential.</b> There is not highly suitable habitat present within the BSA.
<i>Eumetopias jubatus</i>	Steller Sea Lion	Delisted	None	G3	S2	MMPA Protected	Marine and bay.	<b>No potential.</b> No suitable marine and bay habitat present in the BSA.
<i>Lasionycteris noctivagans</i>	Silver-haired Bat	None	None	G3G4	S3S4	IUCN_LC-Least Concern	Lower montane coniferous forest, oldgrowth, riparian forest. Primarily a coastal and montane forest dweller, feeding over streams, ponds and open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.	<b>Moderate potential.</b> Suitable forested, coastal, and riparian habitat available. Hollow trees also present in the BSA.
<i>Martes caurina humboldtensis</i>	Humboldt Marten	FT	SE	G4G5T1	S1	CDFW SSC-Species of Special	North coast coniferous forest; Old growth; Redwood. Occurs only in the coastal redwood zone from the Oregon border	<b>Low potential.</b> The BSA is outside of the species' known distribution (CDFW 2016). The BSA does not overlap with

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
						Concern, USFS S-Sensitive	south to Sonoma County. Associated with late-successional coniferous forests, prefer forests with low, overhead cover.	federally-designated critical habitat (Appendix B, IPaC Report).
<i>Myotis evotis</i>	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.	<b>Low potential.</b> Forested habitat and snags present. However, caves not present.
<i>Orcinus orca</i>	Killer Whale – Southern Resident DPS	FE	None	G4G5T1	N1	MMPA Protected	Marine.	<b>No potential.</b> There is no work in marine habitat to occur.
<i>Pekania pennanti</i>	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.	<b>Moderate potential.</b> Suitable mature, dense forest habitat present within and around the BSA. Snags and a closed canopy are present.
<b>Birds</b>								
<i>Accipiter cooperii</i>	Cooper's Hawk	None	None	G5	S4	CDFW WL-Watch List, IUCN LC-Least Concern	Riparian woodland, upper montane coniferous forest. Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	<b>Present.</b> Numerous observations recorded within and nearby the BSA. The most recent observation within the BSA is from August 2022 (eBird 2022). Most recorded observations are within the town of Trinidad, although there is an observation within approximately 0.5 miles of the southern section of the BSA (eBird 2022).
<i>Accipiter striatus</i>	Sharp-shinned Hawk	None	None	G5	S4	CDFW WL-Watch List,	Cismontane woodland; Lower montane coniferous forest; Riparian forest; Riparian	<b>Present.</b> Various observations recorded within and

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
						IUCN LC-Least Concern	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.	immediately adjacent to the BSA (eBird 2022).
<i>Ardea herodias</i>	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.	<b>High potential.</b> Numerous observations immediately adjacent to the BSA (eBird 2022).
<i>Asio flammeus</i>	Short-eared Owl	None	None	G5	S3	CDFW_SSC-Species of Special Concern   IUCN_LC-Least Concern   USFWS_BCC-Birds of Conservation Concern	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	<b>Low potential.</b> No suitable habitat present. There is a recorded observation approximately one mile south of the BSA (eBird 2022).
<i>Asio otus</i>	Long-eared Owl	None	None	G5	S3?	CDFW_SSC-Species of Special Concern   IUCN_LC-Least Concern   USFWS_BCC-Birds of Conservation Concern	Cismontane woodland; Great Basin scrub; Riparian forest; Riparian woodland; Upper montane coniferous forest. Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses. Require adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	<b>Low potential.</b> No suitable open land habitat present.
<i>Botaurus lentiginosus</i>	American Bittern	None	None	G5	S3S4	IUCN_LC-Least Concern	Freshwater and slightly brackish marshes. Also in coastal saltmarshes. Dense reed beds.	<b>Low potential.</b> No suitable marsh habitat present.



Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	FT	SE	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.	<b>Present.</b> Numerous observations recorded immediately adjacent to the BSA and within one mile (eBird 2022). The BSA does not overlap with federally-designated critical habitat ( <b>Appendix B, IPaC Report</b> ).
<i>Cerorhinca monocerata</i>	Rhinoceros Auklet	None	None	G5	S3	CDFW_WL-Watch List   IUCN_LC-Least Concern	Off-shore islands and rocks along the California coast. Nests in a burrow on undisturbed, forested and unforested islands, and probably in cliff caves on the mainland.	<b>No potential.</b> The BSA is not off-shore and does not contain rocks along the coast.
<i>Charadrius montanus</i>	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 grassland. Short 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.	<b>Low potential.</b> No suitable scrub or grassland habitat available. However, the species has been documented in beach habitat approximately one mile south of the BSA (eBird 2022).
<i>Charadrius nivosus nivosus</i>	Western Snowy Plover	FT	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.	<b>Low potential.</b> There is suitable habitat on beaches adjacent to the BSA, but not within the BSA. Observations have been recorded in nearby areas (eBird 2022). The BSA does not overlap with federally-designated critical habitat ( <b>Appendix B, IPaC Report</b> ).
<i>Circus hudsonius</i>	Northern Harrier	None	None	G5	S3	CDFW SSC-Species of Special	Coastal scrub; Great Basin grassland; Marsh & swamp; Riparian scrub; Valley & foothill	<b>Moderate potential.</b> Some observations are recorded adjacent to the BSA (eBird

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
						Concern, IUCN LC-Least Concern, USFWS BCC-Birds of Conservation Concern	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.	2022). The BSA and adjacent areas are likely not suitable for nesting.
<i>Coccyzus americanus occidentalis</i>	Western Yellow-billed Cuckoo	FT	SE	G5T2T3	S1		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.	<b>No potential.</b> The BSA is outside of the species range (CDFW 2016).
<i>Contopus cooperi</i>	Olive-sided Flycatcher	None	None	G4	S3	CDFW_SSC-Species of Special Concern   IUCN_NT-Near Threatened   NABCI_YWL-Yellow Watch List   USFWS_BCC-Birds of Conservation Concern	Lower montane coniferous forest, redwood, upper montane coniferous forest. Nesting habitats are mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir and lodgepole pine. Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain.	<b>Moderate potential.</b> Few observations have been recorded adjacent to the BSA (eBird 2022).
<i>Egretta thula</i>	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.	<b>Low potential.</b> The BSA does not contain highly suitable habitat for this species.
<i>Elanus leucurus</i>	White-tailed Kite	None	None	G5	S3S4	BLM S-Sensitive, CDFW FP-Fully Protected, IUCN	Cismontane woodland; Marsh & swamp; Riparian woodland; Valley & foothill grassland; Wetland. Rolling foothills and valley margins with scattered oaks and river bottomlands or	<b>Low potential.</b> The BSA likely does not contain suitable nesting or perching habitat for this species. However, there are few documented

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
						LC-Least Concern	marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	observations adjacent to the BSA (eBird 2022).
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	Delisted	Delisted	G4T4	S3S4	CDF S-Sensitive, CDFW FP-Fully Protected	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	<b>Present.</b> Numerous observations within and immediately surrounding the BSA (eBird 2022).
<i>Fratercula cirrhata</i>	Tufted Puffin	None	None	G5	S1S2	CDFW_SSC-Species of Special Concern   IUCN_LC-Least Concern   USFWS_BCC-Birds of Conservation Concern	Protected deepwater coastal communities. Open-ocean bird; nests along the coast on islands, islets, or (rarely) mainland cliffs. Requires sod or earth into which the birds can burrow, on island cliffs or grassy island slopes.	<b>Low potential.</b> There are documented observations adjacent to the BSA (eBird 2022). However, this is an open-ocean bird. Suitable nesting habitat is present on islands and islets off of the Trinidad coast.
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Delisted	SE	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.	<b>Present.</b> Numerous observations recorded within and adjacent to the BSA (eBird 2022). The BSA is within one mile of the ocean shore.
<i>Hydrobates furcatus</i>	Fork-tailed Storm-petrel	None	None	G5	S1	BLM_S-Sensitive   CDFW_SSC-Species of Special Concern   IUCN_LC-Least Concern	Protected deep water coastal communities. Colonial nester on small, offshore islets. Forages over the open ocean, usually well off-shore. Birds choose offshore islets which provide nesting crannies beneath rocks or sod for burrowing.	<b>Moderate potential.</b> There is an observation from June 2022 within 0.5 miles from the BSA (eBird 2022). Most other observations are from over 15 years ago (eBird 2022).
<i>Nannopterum auritum</i>	Double-crested Cormorant	None	None	G5	S4	CDFW WL-Watch List,	Riparian forest; Riparian scrub; Riparian woodland. Colonial nester on coastal cliffs, offshore	<b>Present.</b> Many observations recorded within and adjacent to the BSA (eBird 2022).

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
						IUCN LC-Least Concern	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.	
<i>Nycticorax nycticorax</i>	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 margins, mud-bordered bays, marshy spots.	<b>Moderate potential.</b> A few observations have been recorded adjacent to the BSA (eBird 2022).
<i>Pandion haliaetus</i>	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.	<b>Present.</b> Numerous observations documented immediately adjacent to the BSA (eBird 2022).
<i>Passerculus sandwichensis alaudinus</i>	Bryant's Savannah Sparrow	None	None	G5T2T3	S2S3	CDFW_SSC-Species of Special Concern	Low tidally influences habitats, ruderal areas, and grasslands. Around Humboldt Bay, the species breeds in dairy pastures, taller grasses and rushes, along roads and fences, and water canals (Shuford and Gardali 2008). They are ground nesters.	<b>Moderate potential.</b> Marginally suitable habitat available within the BSA. However, the BSA includes roadsides.
<i>Pelecanus occidentalis californicus</i>	California Brown Pelican	Delisted	Delisted	G4T3T4	S3	BLM_S-Sensitive   CDFW_FP-Fully Protected   USFS_S-Sensitive	Colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	<b>Low potential.</b> The BSA does not contain suitable habitat for this coastal island bird. The species may fly over or nearby the BSA.
<i>Poecile atricapillus</i>	Black-capped Chickadee	None	None	G5	S3	CDFW_WL-Watch List   IUCN_LC-Least Concern	Riparian woodland. Inhabits riparian woodlands in Del Norte and northern Humboldt counties. Mainly found in deciduous tree-types, especially willows and alders,	<b>Present.</b> Numerous observations immediately adjacent to the BSA (eBird 2022).

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
							along large or small watercourses.	
<i>Ptychoramphus aleuticus</i>	Cassin's Auklet	None	None	G4	S2S4	CDFW_SSC- Species of Special Concern   IUCN_NT-Near Threatened   USFWS_BCC- Birds of Conservation Concern	Offshore islands with enough soil for burrowing. Will also nest in rock crevices, under buildings and in debris.	<b>Low potential.</b> There is suitable habitat on islands offshore of Trinidad, but not within the BSA.
<i>Rallus obsoletus obsoletus</i>	California Ridgway's Rail	FE	SE	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.	<b>No potential.</b> The BSA is outside of the species currently known range.
<i>Riparia riparia</i>	Bank Swallow	None	ST	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.	<b>Moderate potential.</b> There is a documented occurrence from July 2021 adjacent to the BSA (eBird 2022).
<i>Strix occidentalis caurina</i>	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.	<b>Low potential.</b> The BSA is outside of the species' range (CDFW 2016). The BSA does not overlap with federally-designated critical habitat (Appendix B, IPaC Report).

#### Reptiles

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
<i>Emys marmorata</i>	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.	<b>Low potential.</b> No suitable basking or upland habitat present within the BSA.
<b>Amphibians</b>								
<i>Ascaphus truei</i>	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.	<b>Moderate potential.</b> Deadman's Creek may provide suitable habitat for this species. The BSA is within the species range (AmphibiaWeb 2022).
<i>Plethodon elongatus</i>	Del Norte Salamander	None	None	G4	S3	CDFW WL-Watch List   IUCN_NT-Near Threatened	Old-growth associated species with optimum conditions in the mixed conifer/hardwood ancient forest ecosystem. Cool, moist, stable microclimate, a deep litter layer, closed multi-storied canopy, dominated by large, old trees.	<b>Moderate potential.</b> Multi-storied canopy with mature trees present. The BSA is within the species range and there is a documented observation from 2001 within two miles (AmphibiaWeb 2022).
<i>Rana aurora</i>	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.	<b>Present.</b> There is a documented detection from August 2018 within the BSA, near the intersection of N Westhaven Drive and Fox Farm Road (iNaturalist 2022).

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
<i>Rana boylei</i>	Foothill Yellow-legged Frog	None	SE	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 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.	<b>Low potential.</b> The BSA is within the species range, but has a low predicted habitat suitability (CDFW 2016).
<i>Rhyacotriton variegatus</i>	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.	<b>Moderate potential.</b> Deadman's Creek may provide suitable habitat for the species. The BSA is within the species range, and there is a documented observation from 2001 within two miles (CDFW 2016, AmphibiaWeb 2022).
<b>Fish</b>								
<i>Acipenser medirostris</i> pop. 1	Green Sturgeon - Southern DPS	FT	None	G2T1	S1	AFS VU-Vulnerable, IUCN NT - Near Threatened	Marine. Humboldt Bay, CA to Coos Bay, OR.	<b>No potential.</b> There is designated critical habitat for this species within 1 mile of the BSA (NOAA 2022b; Appendix B, NOAA Critical Habitat Mapper). However, there is no suitable marine habitat within the BSA for this species.



Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
<i>Acipenser medirostris</i> pop. 2	Green Sturgeon - Northern DPS	None	None	G2T1	S1	AFS_VU-Vulnerable   CDFW_SSC-Species of Special Concern   IUCN_VU-Vulnerable	Aquatic; Estuary; Klamath/North coast flowing waters; Marine bay. Exhibits spawning site fidelity. Known to spawn in the Klamath, Trinity, Salmon, and Eel Rivers in California; historically known to spawn in the South Fork Trinity River. Non-spawning adults occupy marine and estuarine waters. Spawning occurs primarily in cool (11-15 C) sections of mainstem rivers in deep pools (8-9 meters) with substrate containing small to medium sized sand, gravel, cobble, or boulder.	<b>No potential.</b> The BSA does not contain suitable aquatic habitat for this species. However, the BSA is within the species range (CDFW 2016).
<i>Entosphenus tridentatus</i>	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 declining. Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	<b>Low potential.</b> The BSA is within the species range. However, Deadman's Creek is not an aquatic feature with a known and mapped distribution (USFWS 2017). Additionally, no in-water work is currently proposed.
<i>Eucyclogobius newberryi</i>	Tidewater Goby	FE	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.	<b>No potential.</b> The BSA is within the species range. However, Deadman's Creek does not contain suitable brackish aquatic habitat for the species. Also, the BSA does not overlap with federally-designated critical habitat.

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
<i>Lampetra richardsoni</i>	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.	<b>Moderate potential.</b> The BSA is within the species range (CDFW 2016). Deadman's Creek provides marginally suitable habitat for this species.
<i>Oncorhynchus clarkii clarkii</i>	Coast Cutthroat Trout	None	None	G5T4	S3	AFS VU-Vulnerable, CDFW SSC-Species of Special Concern, USFS S-Sensitive	Aquatic; Klamath/North coast flowing waters. Small 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.	<b>Moderate potential.</b> The species has known occurrences in creeks within 0.5 miles of the BSA (CDFW 2022d). However, no in-water work is currently proposed.
<i>Oncorhynchus kisutch pop. 2</i>	Coho Salmon - Southern Oregon / Northern California ESU	FT	ST	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.	<b>Low potential.</b> Deadman's Creek does not provide suitable habitat for this species. The BSA is outside of the mapped distribution (CDFW 2016). No in-water work is currently proposed.
<i>Oncorhynchus mykiss irideus pop. 16</i>	Steelhead - Northern California DPS	FT	None	G5T2T 3Q	S2S3	AFS TH-Threatened	Aquatic; Sacramento/San Joaquin flowing waters. Coastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead.	<b>Low potential.</b> Deadman's Creek does not provide suitable features for this species. Deadman's Creek is not currently mapped as having Steelhead occurrences (CDFW 2014). Additionally, no in-water work is currently proposed.
<i>Oncorhynchus mykiss irideus pop. 36</i>	Summer-run Steelhead Trout	None	SC	G5T4Q	S2	CDFW SSC-Species of Special Concern	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters. California coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS and No. Calif DPS. Cool, swift, shallow water and clean loose gravel for spawning, and	<b>Low potential.</b> Deadman's Creek does not provide suitable features for this species. It is not currently mapped as having Summer-run Steelhead distribution (CDFG 2011). Additionally, no in-water work is currently proposed.

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
							suitably large pools in which to spend the summer.	
<i>Oncorhynchus tshawytscha</i> pop. 17	Chinook Salmon - California Coastal ESU	FT	None				Rivers and streams south of the Klamath River to the Russian River.	<b>Low potential.</b> Deadman's Creek does not provide suitable habitat for this species. Deadman's Creek is outside of the mapped distribution (CDFW 2016). Additionally, no in-water work is currently proposed.
<i>Oncorhynchus tshawytscha</i> pop. 30	Chinook Salmon - Upper Klamath and Trinity Rivers ESU	FC	ST	G5T2Q	S2	CDFW_SSC- Species of Special Concern   USFS_S- Sensitive	Klamath/North coast flowing waters. Spring-run chinook in the Trinity River and the Klamath River upstream of the mouth of the Trinity River. Major limiting factor for juvenile chinook salmon is temperature, which strongly effects growth and survival.	<b>No potential.</b> The BSA encompasses the California Coastal ESU.
<i>Spirinchus thaleichthys</i>	Longfin Smelt	FC	ST	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.	<b>No potential.</b> The BSA is outside of the mapped range (CDFW 2016).
<i>Thaleichthys pacificus</i>	Eulachon	FT	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. Eulachon were documented in the Little River in 2022 by the Green Diamond Timber Company.	<b>No potential.</b> Deadman's Creek does not provide suitable features for this species. The BSA is outside of the mapped range (CDFW 2016). Additionally, no in-water work is currently proposed.

#### Mollusks

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
<i>Margaritifera falcata</i>	Western Pearlshell	None	None	G4G5	S1S2		Aquatic. Prefers lower velocity waters.	<b>Low potential.</b> Due to the probable absence of salmonids in Deadman's Creek, which is required for the species' egg laying, this species is unlikely to occur. Additionally, no in-water work is currently proposed.
<b>Insects</b>								
<i>Bombus caliginosus</i>	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.	<b>Low potential.</b> The BSA does not contain large patches of plants in the preferred genera for foraging. Additionally, there are few observations over nine miles from the BSA (iNaturalist 2022).
<i>Bombus crotchii</i>	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.	<b>Low potential.</b> The BSA appears to be outside of the species distribution (Bumble Bee Watch 2022, iNaturalist 2022). Additionally, the BSA does not contain suitable foraging habitat.
<i>Bombus occidentalis</i>	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. Prefers large patches of native nectar plants. Typically, the species nests underground in abandoned rodent or other animal nests, but they have also been found aboveground among logs of railroad ties.	<b>Low potential.</b> The BSA does not contain large patches of plants in the preferred genera for foraging. Additionally, there are no known occurrences near the BSA (Bumble Bee Watch 2022, iNaturalist 2022).
<i>Danaus plexippus</i>	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	<b>Low potential.</b> There is a documented observation within 0.25 miles of the BSA from September 2017 (iNaturalist 2022). However, known overwintering sites are south of Humboldt County (Pelton et al. 2016).

Scientific Name	Common Name	ESA	CESA	Global Rank <sup>2</sup>	State Rank <sup>2</sup>	Other Status	Habitat Requirements <sup>1</sup>	Potential to Occur
							redwood, and coast live oak trees.	
<i>Scaphinotus behrensi</i>	Behrens' Snail-eating Beetle	None	None	G2G4	S2S4		North coast coniferous forest. Found in extreme NW CA along the coast.	<b>Low potential.</b> Snails were not observed during the site visit.
<i>Bombus caliginosus</i>	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.	<b>Low potential.</b> The BSA does not contain large patches of plants in the preferred genera for foraging. Additionally, there are few observations over nine miles from the BSA (iNaturalist 2022).

#### **Footnotes:**

<sup>1</sup> General habitat, and microhabitat column information, reprinted from CNDDDB (September 2022).

<sup>2</sup> Rankings from CNDDDB (September 2022).

#### **Column Header Categories and Abbreviations:**

**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 2022e); ? = "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):

**S** (California Department of Forestry and Fire Protection Sensitive): "those species that warrant special protection during timber operations" (CDFW 2022e);

**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 2022e);

**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 2022e);

**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 2022e);

**Potential to Occur:**

<b>No Potential</b>	Habitat in and adjacent to the PSB is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
<b>Low Potential:</b>	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.
<b>Moderate Potential:</b>	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.
<b>High Potential:</b>	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 PSB
<b>Present:</b>	Detected or documented on-site.

## Critical Habitat

There is no USFWS or NOAA-designated Critical Habitat within the BSA. However, there is NOAA-designated Critical Habitat for the Killer Whale (*Orcinus orca*) and Green Sturgeon (*Acipenser medirostris* pop. 1; southern DPS) within one mile of the BSA (**Appendix A, Figure 5**). The Critical Habitat is located in the Trinidad Bay, where no work is proposed. No impact to critical habitat will occur.

## Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) requires that 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.

Under the PFMC, the Pacific Coast Salmon Fishery Management Plan (FMP) was created to manage commercial and recreational salmon fisheries along the west coast of the U.S. There is designated Chinook (*Oncorhynchus tshawytscha*) and Coho (*Oncorhynchus kisutch*) Salmon EFH within the BSA, and the PFMC Salmon FMP encompasses these species (**Appendix B, EFH Report**). However, no in-water work where salmon would occur is proposed and no impacts to EFH are expected. A recommendation to protect EFH is provided in **Section 6**.

# 6. Conclusion and Recommendations

Based on surveys, suitable habitat, and nearby occurrence records, five special status plants have moderate potential to occur within the PSB. Protocol level plant surveys will be required in April and June to determine if special status plant species are present in the PSB. No state or federally listed plants have a moderate or high potential to occur in the PSB.

Red alder woodland, Redwood forest and woodland, and Salal – berry brambles are all SNCs present in the PSB and may also be considered ESHAs in the Coastal Zone. Some berry brambles may be removed south of Van Wycke Street, but would be expected to revegetate naturally, resulting in temporary impacts. The Project requires the clearing of approximately 0.5 acres of Red alder woodland and some redwood trees surrounding the water tanks up to a distance of 80 feet, which will result in permanent impacts. Loss of habitat (including SNCs which also may be ESHA) may occur.

Three bird species (Marbled Murrelet, Bald Eagle, and Bank Swallow) that are federally-listed, state-listed (or both) have a moderate potential to occur based on recent detections in proximity to the BSA. However, these species are more likely to fly over the BSA than nest within the BSA. In addition, three other special status mammals, 12 other birds, four amphibians, and two fish species have a moderate to high potential to occur. Due to the possibility of various species occurring within the BSA during construction, a pre-construction awareness training on identification of special status mammals, birds, amphibians, and their sign is recommended to reduce potential impacts.

With inclusion of the measures listed below, impacts to sensitive plants, SNCs, and wildlife species would be reduced. The proposed measures may be included in and potentially expanded upon in forthcoming regulatory documents (as needed).

### **Recommendations to Protect Special Status Plants**

Avoidance and minimization measures for special status plant species are addressed collectively for all species. Significant impacts to special-status plant species present or likely to be present onsite shall be minimized, or avoided with the following measures:

- Seasonally appropriate pre-construction surveys for special status plant species shall occur prior to construction within the planned area of disturbance for the project, during the appropriate blooming times (April and June). Survey methods shall comply with CDFW rare plant survey protocols and shall be performed by a qualified field botanist. Any populations of special status plant species that are detected shall be mapped.
- The locations of any special status plant populations to be avoided shall be clearly identified in the field and surrounded by highly visible exclusion fencing and/or flagging.
- A pre-construction worker training will occur within seven days of the start of construction and detail any areas where special status plant populations have been identified for protection within the limits of construction, staging, and stockpiling.

If special status plant populations are detected where construction would have unavoidable impacts, a compensatory conservation plan shall be prepared and implemented in coordination with CDFW. Such plans may include salvage, propagation, on-site reintroduction in restored habitats, and monitoring.

### **Recommendations to Protect Sensitive Natural Communities**

Significant impacts to Sensitive Natural Communities present onsite shall be minimized, or avoided, with the following measures:

- Pruning and removal of trees will be kept to the minimum necessary for fire safety and to complete project activities. If impacts cannot be avoided, the SNCs shall be replaced at an off-site location at no less than a 1:1 ratio or to the satisfaction of jurisdictional agencies.

### **Recommendations to Protect Special Status Mammals**

The White-footed Vole (CDFW SSC), Silver-haired Bat (CDFW SAL), and Fisher (CDFW SSC) have a moderate potential to occur based on detections or habitat quality within and around the BSA. The following measure is recommended for inclusion to reduce potential impacts:

- Potential locations for denning, roosting, and nesting will be inspected within the PSB and BSA within a week of construction commencing. Varying for species, this includes hollowed-out trees, snags, and under rocks and logs within the BSA.



- All trees planned for removal will be marked and a qualified biologist will thoroughly inspect them for signs of the species' inhabitation within a week of removal.
- If a den, roost, or nest is located, a no-work buffer will be determined based on the species.
- A pre-construction worker training will occur within seven days of the start of construction and address identification and protection of special status mammals.

## **Recommendations to Protect Special Status and Nesting Birds**

One special status species (California Brown Pelican; CDFW Fully Protected) was observed flying over the BSA during the site visit. Three bird species (Marbled Murrelet, Bald Eagle, and Bank Swallow) that are federally-listed, state-listed (or both) have a moderate potential to occur based on recent detections in proximity to the BSA. These listed species are unlikely to forage or nest within the BSA. The Project would not adversely affect these species, and consultation under Section 7 of the ESA would therefore not be required. However, twelve other special status bird species have a moderate to high potential to occur.

In addition, migratory and nesting birds are protected by the Migratory Bird Treaty Act and Fish and Game Code. If state special status and/or native migratory birds are nesting in the PSB, or up to 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 said species:

- 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 ornithologist 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 up to 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.
- A pre-construction worker training will occur within seven days of the start of construction and address identification and protection of special status and nesting birds.

### **Recommendations to Protect Special Status Amphibians**

The Pacific Tailed Frog (CDFW SSC), Del Norte Salamander (CDFW Watch List), Northern Red-legged Frog (CDFW SSC), and Southern Torrent Salamander (CDFW SSC) have a moderate to high potential to occur based on recorded occurrences (either public observations or on the CNDDDB; CDFW 2022f, iNaturalist 2022) or the presence of suitable habitat within or nearby the BSA. Also, Deadman's Creek is described as amphibian-bearing in a Nonindustrial Timber Management Plan (N. Simpson, personal communication, November 17, 2022). To reduce potential impacts to these amphibian species, the following measures are recommended:

- A qualified biologist would perform a pre-construction survey for the amphibian species within seven days prior to commencement of ground disturbance. The survey shall be limited to the PSB and within 100 feet of suitable habitat. Suitable habitat would be determined by the qualified biologist. The biologist would relocate any specimens that occur within the work-impact zone to nearby suitable habitat.
- In the event that a special status amphibian is observed in an active construction zone, the contractor would halt construction activities in the area and the frog and/or salamander would be moved by a qualified biologist to a safe location in similar habitat outside of the construction zone.
- Work crews will inspect open trenches, pits, and under construction equipment and material left onsite in the morning and evening to look for amphibians that may have become trapped or are seeking refuge.
- A pre-construction worker training will occur within seven days of the start of construction and address identification and protection of special amphibians.

### **Recommendations to Protect Special Status Fish and EFH**

Two special status fish species (Western Brook Lamprey and Coast Cutthroat Trout) have a moderate potential to occur within Deadman's Creek, which crosses under Westhaven Drive and the BSA. Additionally, there is designated Chinook (*Oncorhynchus tshawytscha*) and Coho (*Oncorhynchus kisutch*) Salmon EFH within the BSA, and the PFMC Salmon FMP encompasses these species. Deadman's Creek

is not currently mapped as containing special status or listed fish species (CDFW 2022f). Currently, no in-water work or modification to the culvert that directs Deadman's Creek under Westhaven Drive is proposed. If Project construction plans involving the culvert or in-water work change, additional recommendations to protect special status fish will be implemented. The following measure is recommended to reduce potential impacts to EFH and special status fish species:

- Any Project-related construction materials or dirt from trench-digging will be restricted from entering Deadman's Creek to reduce impacts of sedimentation or turbidity.
- Removal of riparian habitat along Deadman's Creek shall be avoided if feasible. If riparian habitat removal cannot be avoided, riparian habitat would be replanted at ratios acceptable to jurisdictional resource agencies.

## 7. Scope and limitations

GHD otherwise disclaims responsibility to any person other than City of Trinidad 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 to section 10 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

## 8. Assumptions

Conclusions for this BRR were drawn from historic surveys and studies, as well as web-based sensitive species database and literature searches, field surveys and site visits. As these studies/surveys only serve as a snapshot of conditions during a short time period, they may not accurately reflect actual occurrence of species presence in the Project vicinity at a given time. Therefore, conclusions in this BRR have been based more on the assumption of presence or non-presence given existing habitat in the PSB and BSA, and impact minimization measures have been developed accordingly. All determinations herein were based on the proposed Project Description, the current Project footprint, known as the PSB, and a buffered distance of 100 feet to account for impacts to wildlife species, known as the BSA (**Appendix A, Figure 2-1 and 2-2**). If the Project footprint or construction methods change significantly prior to Project implementation, determinations would need to be revisited, to ensure that they are still accurate.

## 9. Literature Cited

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# Appendices

# Appendix A

## Figures



# **Appendix B**

**Database Search Results**

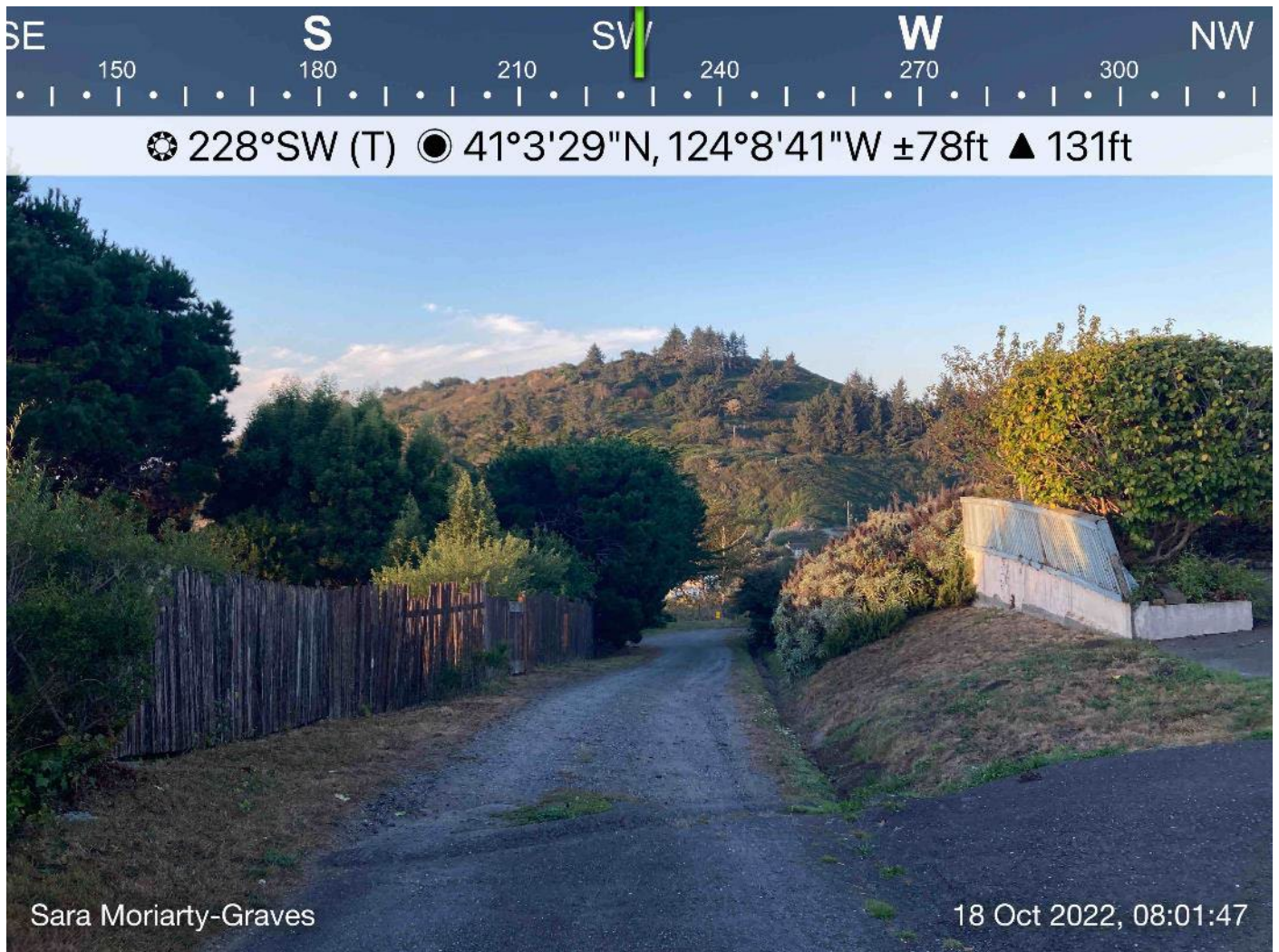
**(CNDDDB, CNPS, IPaC, EFH, NOAA Fisheries  
Critical Habitat)**

# **Appendix C**

## **Site Visit Photographs**

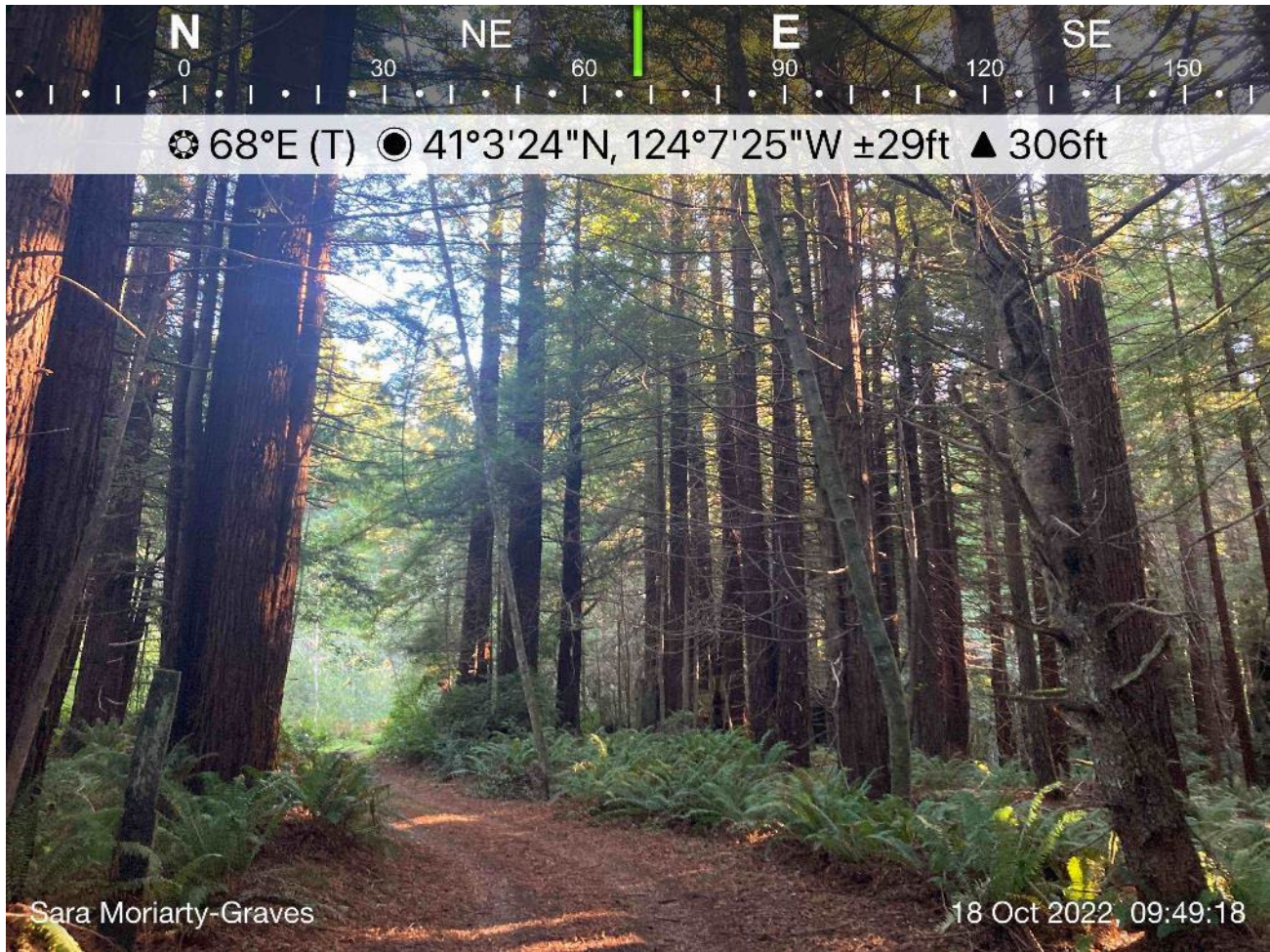


**Photo C-1.** View of residential neighborhood on Edwards Street in northern section of the PSB.



**Photo C-2.** Van Wycke Street in northern section of the PSB that extends toward Trinidad Head.





**Photo C-3.** Redwood forest and woodland SNC along the access road to the water tank.





**Photo C-4.** Standing water present adjacent to the PSB (and within the BSA), near the access road to the water tank.





**Photo C-5.** Second growth Redwood forest and woodland within the BSA near the water tank, with a well established canopy and understory.





**Photo C-6.** Red alders and cotoneaster (*Cotoneaster sp.*) in the BSA near the water tank.





**Photo C-7.** View of roadside vegetation and residential landscaping in the southern section of the PSB, on Westhaven Drive.



## West Elevation

☉ 103°E (T) ● 41.051354°, -124.119668° ±13ft ▲ 278ft



**Photo C-8.** View of riparian habitat and degraded roadside habitat invaded by English ivy above Deadman's Creek culvert under Westhaven Drive.

# **Appendix D**

**List of Plant Species Observed On-site**

**Table D1 All plant species observed within the PSB.**

Scientific Name	Common Name	Native	Family
<i>Sambucus nigra</i>	elderberry	Native	Adoxaceae
<i>Daucus pusillus</i>	wild carrot	Native	Apiaceae
<i>Oenanthe sarmentosa</i>	water parsley	Native	Apiaceae
<i>Lysichiton americanus</i>	skunk cabbage	Native	Araceae
<i>Hedera helix</i>	English ivy	Non-native	Araliaceae
<i>Achillea millefolium</i>	yarrow	Native	Asteraceae
<i>Baccharis pilularis</i>	Coyote brush	Native	Asteraceae
<i>Helminthotheca echioides</i>	prickly oxtongue	Non-native	Asteraceae
<i>Hypochaeris radicata</i>	rough cat's ear	Non-native	Asteraceae
<i>Lapsana communis</i>	nipplewort	Non-native	Asteraceae
<i>Sonchus oleraceus</i>	prickly lettuce	Non-native	Asteraceae
<i>Athyrium filix-femina</i>	lady fern	Native	Athyriaceae
<i>Alnus rubra</i>	red alder	Native	Betulaceae
<i>Raphanus raphanistrum</i>	wild radish	Non-native	Brassicaceae
<i>Lonicera involucrata</i>	twinberry	Native	Caprifoliaceae
<i>Cerastium glomeratum</i>	sticky mouse-ear chickweed	Non-native	Caryophyllaceae
<i>Sequoia sempervirens</i>	coast redwood	Native	Cupressaceae
<i>Carex obnupta</i>	slough sedge	Native	Cyperaceae
<i>Cyperus eragrostis</i>	tall flatsedge	Native	Cyperaceae
<i>Isolepis cernua</i>	fiber optic grass	Native	Cyperaceae
<i>Pteridium aquilinum</i>	brackenfern	Native	Dennstaedtiaceae
<i>Polystichum munitum</i>	Western sword fern	Native	Dryopteridaceae
<i>Equisetum telmateia</i>	great horsetail	Native	Equisetaceae
<i>Gaultheria shallon</i>	salal	Native	Ericaceae
<i>Vaccinium ovatum</i>	evergreen huckleberry	Native	Ericaceae
<i>Vaccinium parviflorum</i>	red huckleberry	Native	Ericaceae
<i>Euphorbia peplus</i>	petty spurge	Non-native	Euphorbiaceae
<i>Lotus corniculatus</i>	bird's-foot trefoil	Non-native	Fabaceae
<i>Trifolium dubium</i>	lesser trefoil	Non-native	Fabaceae
<i>Trifolium pratense</i>	red clover	Non-native	Fabaceae
<i>Geranium robertianum</i>	herb-robert	Non-native	Geraniaceae
<i>Crocasmia</i> sp.	crocasmia	Non-native	Iridaceae
<i>Juncus</i> sp.	(not flowering)	Native	Juncaceae
<i>Myrica californica</i>	wax myrtle	Native	Myricaceae
<i>Epilobium ciliatum</i>	Northern willow herb	Native	Onagraceae
<i>Abies grandis</i>	grand fir	Native	Pinaceae
<i>Picea sitchensis</i>	Sitka spruce	Native	Pinaceae

<i>Pinus radiata</i>	Monterey pine	Non-native	Pinaceae
<i>Pseudotsuga menziesii</i>	Douglas fir	Native	Pinaceae
<i>Tsuga heterophylla</i>	Hemlock	Native	Pinaceae
<i>Plantago lanceolata</i>	ribwort plantain	Non-native	Plantaginaceae
<i>Plantago major</i>	broadleaf plantain	Non-native	Plantaginaceae
<i>Veronica americana</i>	American brooklime	Non-native	Plantaginaceae
<i>Agrostis stolonifera</i>	creeping bentgrass	Non-native	Poaceae
<i>Anthoxanthum odoratum</i>	vernal sweet grass	Non-native	Poaceae
<i>Avena sativa</i>	oats	Non-native	Poaceae
<i>Cortaderia jubata</i>	pampas grass	Non-native	Poaceae
<i>Dactylus glomerata</i>	orchard grass	Non-native	Poaceae
<i>Holcus lanatus</i>	soft chess	Non-native	Poaceae
<i>Rumex crispus</i>	curly dock	Non-native	Polygonaceae
<i>Ranunculus repens</i>	buttercup	Non-native	Ranunculaceae
<i>Rhamnus purshiana</i>	cascara	Native	Rhamnaceae
<i>Cotoneaster sp.</i>	cotoneaster	Non-native	Rosaceae
<i>Potentilla anserina</i>	silverweed	Native	Rosaceae
<i>Rubus armeniacus</i>	Himalayan blackberry	Non-native	Rosaceae
<i>Rubus parviflorus</i>	thimbleberry	Native	Rosaceae
<i>Rubus ursinus</i>	California blackberry	Native	Rosaceae
<i>Gallium aparine</i>	cleavers	Non-native	Rubiaceae
<i>Salix lasiolepis</i>	Arroyo willow	Native	Salicaceae
<i>Viola sempervirens</i>	redwood violet	Native	Violaceae

# **Appendix E**

## **Rapid Assessment Datasheets**

# **Appendix F**

**List of Wildlife Species Detected On-site**

**Table F1      Terrestrial Wildlife Observed On-site**

Scientific Name	Common Name	Observation Type	Special Status
<i>Ursus americanus</i>	American Black Bear	Scat	None
<i>Urocyon cinereoargenteus</i>	Gray Fox	Scat	None
<i>Procyon lotor</i>	Raccoon	Observed	None

**Table F2      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 F3**                      **Avian Species Detected On-site**

Alpha Code	Common Name	Latin Name	Highest Breeding Status	Breeding Code	Special Status
ANHU	Anna's Hummingbird	<i>Calypte anna</i>	Encountered in study area	E	FGC, MTBA
WREN	Wrentit	<i>Chamaea fasciata</i>	Territorial song or drumming heard	S	FGC, MTBA
NOFL	Northern Flicker	<i>Colaptes auratus</i>	Territorial song or drumming heard	S	FGC, MTBA
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	Encountered in the study area	E	FGC, MTBA
STJA	Steller's Jay	<i>Cyanocitta stelleri</i>	Territorial song or drumming heard	S	FGC, MTBA
HOFI	House Finch	<i>Haemorhous mexicanus</i>	Encountered in the study area	E	FGC, MTBA
VATH	Varied Thrush	<i>Ixoreus naevius</i>	Territorial song or drumming heard	S	FGC, MTBA
DEJU	Dark-eyed Junco	<i>Junco hyemalis</i>	Encountered in the study area	E	FGC, MTBA
SOSP	Song Sparrow	<i>Melospiza melodia</i>	Territorial song or drumming heard	S	FGC, MTBA
FOSP	Fox Sparrow	<i>Passerella iliaca</i>	Territorial song or drumming heard	S	FGC, MTBA
BRPE	California Brown Pelican	<i>Pelecanus occidentalis</i>	Encountered flying over the study area	E	CDFW FP, FGC, MTBA
SPTO	Spotted Towhee	<i>Pipilo maculatus</i>	Territorial song or drumming heard	S	FGC, MTBA
CBCH	Chestnut-backed Chickadee	<i>Poecile rufescens</i>	Encountered in the study area	E	FGC, MTBA
RCKI	Ruby-crowned kinglet	<i>Regulus calendula</i>	Encountered in the study area	E	None, invasive
BLPH	Black Phoebe	<i>Sayornis nigricans</i>	Encountered in the study area	E	FGC, MTBA
EUST	European Starling	<i>Sturnus vulgaris</i>	Encountered in the study area	E	None, invasive
AMRO	American Robin	<i>Turdus migratorius</i>	Encountered in study area	E	FGC, MTBA
GCSP	Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	Territorial song or drumming heard	S	FGC, MTBA
WCSP	White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	Encountered in study area	E	FGC, MTBA

**Definitions:**

FGC = protected by California Fish and Game Code

MTBA = protected by the federal Migratory Bird Treaty Act

CDFW FP = California Department of Fish and Wildlife Fully Protected species

# **Appendix E**

## **Wetland Delineation**



# **Wetland Delineation**

## **Trinidad Water Storage Tank and Pipeline Replacement Project**

City of Trinidad

January 04, 2023



# Wetland Delineation: Rev. 1

# Trinidad Water Storage Tank and Pipeline Replacement Project

This document has been prepared for:



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# Contents

<b>1.</b>	<b>Introduction</b>	<b>1</b>
1.1	Project Description	1
1.2	Project Location	1
1.3	Summary	1
1.4	Regulatory Background	2
<b>2.</b>	<b>Methodology</b>	<b>4</b>
2.1	Wetland Delineation Approach	6
2.2	Vegetation	6
2.3	Soils	7
2.4	Hydrology	8
<b>3.</b>	<b>Results</b>	<b>9</b>
3.1	Three-parameter Wetlands	9
3.2	One-parameter wetlands	10
<b>4.</b>	<b>Conclusions</b>	<b>10</b>
<b>5.</b>	<b>Special Terms and Conditions</b>	<b>10</b>
5.1	Purpose of this Report	10
5.2	Scope and Limitations	10
<b>6.</b>	<b>References</b>	<b>11</b>
<b>Appendix A</b>	<b>Figures</b>	<b>14</b>
<b>Appendix B</b>	<b>Data Sheets</b>	<b>15</b>
<b>Appendix C</b>	<b>Record of Climatological Observations and WETS Table</b>	<b>16</b>
	McKinleyville WETS Table	1
<b>Appendix D</b>	<b>On-site Plant list</b>	<b>2</b>
<b>Appendix E</b>	<b>Site Photographs</b>	<b>5</b>
<b>Appendix F</b>	<b>NRCS Custom Soil Resource Report</b>	<b>16</b>

## Table index

Table 1	Wetlands within the Delineated Area and Potential Jurisdiction	9
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# 1. Introduction

GHD prepared this report to delineate wetlands and Other Waters of the U.S. and/or State and accompanying appendices on behalf of The City of Trinidad, in support of the proposed Trinidad Water Storage Tank and Pipeline Replacement Project (Project) in the City of Trinidad (City) and the community of Westhaven, in Humboldt County, California (**Appendix A, Figure 1**). This report supports the Project's environmental documentation, permitting, and construction planning as deemed appropriate. The proposed Project Area includes the proposed construction area and staging areas in and around the City (**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 purpose of this Project is to replace 1.4 miles of vulnerable pipelines and construct a 300,000 gallon storage tank and chlorination booster system for the City of Trinidad.

Project components include the installation of 6,400 feet of 8-inch water feed supply main along Westhaven Drive from the Water Treatment Plant (WTP) to the water tanks with dual lines including 1,500 feet of 10-inch distribution line and 5,250 feet of 6-inch distribution line. The existing 150,000 gallon redwood storage tank will be replaced with a 300,000 gallon steel water storage tank, with additional valving, and a chlorine booster system for the distribution system. In addition, 800 feet of 8-inch water main will be installed on Edwards Street from Hector to Galindo with cluster valves, pressure regulating valve, fire hydrant and blowoff near the end of eastern Van Wyke Trail. The temporary above ground water line along the bluff servicing Van Wyke Street will be removed.

## 1.2 Project Location

The Project is located in the City of Trinidad and in the community of Westhaven in Humboldt County, California, on the Trinidad and Crannell USGS quadrangles (**Appendix A, Figures 1 and 2**).

Two areas of construction are included in the Project Study Boundary (PSB). One area is in the City of Trinidad along Edwards Street, Van Wyke Street, and Hector Street. The other construction area is in the community of Westhaven along Westhaven Drive, and approximately 830 feet east to the water tank location. The water tank property and the water treatment plant have both been annexed into City of Trinidad City limits. The Project is entirely within the Coastal Zone, within the Appeal and Local Jurisdiction which is regulated by the City of Trinidad Local Coastal Program (LCP) in the area of Edwards and Van Wyke Street as well as the water tanks and water treatment plant (CoT 1978). The area of Westhaven Drive outside of the water tank and water treatment plant properties are regulated by the Humboldt County LCP (HCPD 2014, **Appendix A, Figure 3**)

## 1.3 Summary

GHD conducted the wetland delineation fieldwork on October 18 and 19, 2022 and revisited Wetlands 3 and 4 on December 22, 2022 to observe hydrology during precipitation. The delineation was completed within the Project Area (or Project Study Boundary [PSB]), as shown in **Appendix A, Figure 2**. The PSB is 246,825 ft<sup>2</sup> (5.7 acres). United States Army Corps of Engineers (USACE) three-parameter wetlands were mapped based on wetland indicative vegetation, hydric soils, and wetland hydrology. One-parameter wetlands jurisdictional to the California Coastal Commission (CCC), the City of Trinidad LCP and the Humboldt County LCP were also mapped. Wetlands meeting two parameters were included in the one-parameter category as they are jurisdictional to the CCC and not the USACE. In addition to the water tank access road and buffer area around the tanks, the east side of Westhaven Drive was surveyed and delineated.

The wetlands in the PSB are all limited to roadside ditches along Westhaven Drive. The wetland delineation identified two potential three-parameter wetlands with hydric soil, hydrophytic vegetation, and hydrology and three one-

parameter wetlands with hydrophytic vegetation in roadside ditches. All wetlands were mapped as shown in **Appendix A, Figure 4**. The total area of three-parameter wetlands within the PSB is 2,230 ft<sup>2</sup> (0.05 acre) and the total area of one-parameter wetland is 3,875 ft<sup>2</sup> (0.09 acre). Deadman's Creek passes underneath Westhaven Drive through a concrete culvert approximately 300 feet north of Fox Farm Road. Riparian vegetation associated with this creek is within the PSB; however, the creek itself is culverted through the PSB and does not surface within the Project footprint (**Appendix A, Figure 5**).

## 1.4 Regulatory Background

### 1.4.1 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 identifies 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 U.S. Army Corps of Engineers (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, USACE 2010).

## 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).

### 1.4.2 State

The State Water Resources Control Board's (SWRCB) April 2021 *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 April 2020 Implementation Guidance for the 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).*

### 1.4.3 Local Jurisdiction

The PSB is entirely within the California Coastal Zone. The portion of the PSB in the Westhaven Drive area is in the jurisdiction of the Humboldt County LCP. The Trinidad Area Plan (2014) is the Land Use Plan for this area, and the Humboldt County Zoning Code is the Implementation Plan.

The portion of the PSB in the area of Edwards and Van Wycke Street is in the jurisdiction of the City of Trinidad LCP. The City of Trinidad's General Plan (1978) is the Land Use Plan for the City's LCP, and the Implementation Plan consists of the zoning, grading, building and subdivision ordinances.

## Trinidad Area Plan

The Trinidad Area Plan (revised in 2014) includes the following relevant codes:

*30233. (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

*(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

*30607.1 Where any dike and fill development is permitted in wetlands in conformity with this division, mitigation measures shall include, at a minimum, either acquisition of equivalent areas of equal or greater biological productivity or opening up equivalent areas to tidal action; provided, however, that if no appropriate restoration site is available, an in-lieu fee sufficient to provide an area of equivalent productive value or surface areas shall be dedicated to an appropriate public agency, or such replacement site shall be purchased before the dike or fill development may proceed. Such mitigation measures shall not be required for temporary or short-term fill or diking; provided, that a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time.*

### 2. Permitted Uses in Wetlands

a. Proposed development within wetland areas, as defined and identified in Section 3.30B1, shall be subject to requirements of this section regarding permitted uses of wetlands unless it can be shown that there exists no wetland characteristics constituting a wetland as defined by the Coastal Act.

(7) Incidental public service purposes.

### 3. Wetland Buffer (Amended by Res. No. 82-100, 7/27/82)

a. 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.

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

30236 (d) Riparian corridors on all perennial and intermittent streams shall be, at a minimum, the larger of the following:

(1) 100 feet, measured as the horizontal distance from the stream transition line on both sides.

(2) 50 feet plus four times the average percent of slope, measured as a slope distance from the stream transition line on both sides of intermittent and perennial streams.

(3) Where necessary, the width of riparian corridors shall be expanded to include significant areas of riparian vegetation adjacent to the corridor, slides, and areas with visible evidence of slope instability, not to exceed 200 feet measured as a horizontal distance.

30240 (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

Environmentally sensitive habitats within the County Trinidad Planning Area shall include:

- Rivers, creeks and associated riparian habitats
- Offshore rocks, islands and intertidal areas
- Other critical habitats for rare or endangered species listed on state or federal lists
- Wetlands. No wetlands are currently identified.

## City of Trinidad General Plan

The City of Trinidad General Plan (1978) includes the following relevant sections:

### Biological Resources

Riparian vegetation is located along portions of all the coastal streams in the planning area. This vegetation protects the quality of the water, minimizes soil erosion and slippage, and provides a valuable habitat for a wide variety of animals and birds. Four types of rare plants are found in the planning area. The boundary of the areas where these plants are found has not been established.

### Development Constraints

Riparian vegetation should be disturbed as little as possible. Development on sites where rare plants are known to exist should be located and designed to minimize the impact on the rare plants...

### Recommended Land Use

Areas within 100 feet of streams near developed lands are placed in the Open Space or Special Environment categories to establish a riparian protection zone. Riparian habitat along streams in timber management areas has

been designated Resource Production. The Forest Practices Act provides for the retention of streamside vegetation while allowing careful removal of merchantable timber.

## 2. Methodology

### 2.1 Wetland Delineation Approach

GHD environmental scientists conducted the wetland delineation on October 18 and 19, 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 and LCP requires only one-parameter of the three to be present in order to define the site as a wetland (14 CCR 13577; CCC 2011). Three one-parameter wetlands and two three-parameter wetlands were identified in ditches along Westhaven Drive. 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 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.

Each wetland area was designated with a number (e.g., W1). The wetland points were also labelled with their respective wetland number. In addition to the wetland sampling points, two upland sampling points were described. These were labelled beginning with a "U" and numbered in sequence (e.g., U1, U2). The upland sampling points were completed to confirm and document the absence of any wetland indicators (soils, hydrology, and vegetation). Appendix B contains all datasheets recorded during the delineation.

### 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 (USACE 2010). 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 E**. photographs have been included as **Appendix F**. The separate Biological Resources Report documents the location and extent of mapped vegetation alliances and Sensitive Natural Communities within the Project Area (GHD 2022).

## 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 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 2018).

The Munsell Soil Color Book (COLOR, M. 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 five soil units within the Project Area (**Appendix A, Figure 6** and NRCS report in **Appendix G**). 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 G** for complete details.

#### **Megwil and Cannonball soils, 0 to 5 percent slopes**

The Megwil and Cannonball soils, 0 to 5 percent slopes map unit composition contains: 50% Megwil and similar soils, 35% Cannonball and similar soils, and 15% minor components (consisting of 5% Tsunami, 5% Urban land, 3% Talawa, and 2% Aubell). This soil type comprises 38.5% of the PSB and is located on Westhaven Drive (**Appendix A, Figure 6** and **Appendix G**).

Megwil and Cannonball soils can be found on marine terraces, and the parent material is mixed marine deposits. Megwil and Cannonball soils consists of slightly decomposed plant material and loam in the top horizons (1-18 inches) above sandy clay loam on all other horizons. Megwil and Cannonball soils have a land capability classification (LCC) of 2e without irrigation (none specified with irrigation) and is not rated as a hydric soil. Megwil and Cannonball soils are moderately well drained, and the depth to water table is 20 - 39 inches.

#### **Atwell-Ladybird complex, 30 to 50 percent slopes**

The Atwell-Ladybird complex, 30 to 50 percent slopes map unit composition contains: 75% Atwell and similar soils, 15% Ladybird and similar soils, and 10% minor components (consisting of 5% Lacks creek, 3% Slide creek, and 2% Rock outcrop). This soil type comprises 29% of the PSB and is located on Westhaven Drive (**Appendix A, Figure 6** and **Appendix G**).

Atwell-Ladybird complex soils can be found on mountain slopes, and the parent material is earthflow deposits derived from sandstone and mudstone. Atwell-Ladybird complex consists of slightly decomposed plant material in the top horizon (0-2 inches), above silt loam, and clay loam on all other horizons. Atwell-Ladybird complex has an LCC of 6e without irrigation (none specified with irrigation) and is not rated as a hydric soil. Atwell-Ladybird complex is moderately well drained, and the depth to water table is 28 - 39 inches.

### **Lepoil-Espa-Candymountain complex, 15 to 50 percent slopes**

The Lepoil-Espa-Candymountain complex, 15 to 50 percent slopes map unit composition contains: 35% Lepoil and similar soils, 30% Espa and similar soils, 25% Candymountain and similar soils, and 10% minor components (consisting of 5% Hutsinpillar, and 5% Cannonball). This soil type comprises 9.8% of the PSB and is located on Westhaven Drive and at the water tank location (**Appendix A, Figure 6 and Appendix G**).

Lepoil-Espa-Candymountain complex soils can be found on marine terraces, and the parent material is mixed marine deposits derived from sedimentary rock. Lepoil-Espa-Candymountain complex consists of slightly decomposed plant material in the top horizon (0-1 inch), above fine sandy loam and fine sand on all other horizons. Lepoil-Espa-Candymountain complex has an LCC of 6e without irrigation (none specified with irrigation), and is not rated as a hydric soil. Lepoil-Espa-Candymountain complex is well drained, and the depth to water table is more than 80 inches.

### **Candymountain, 30 to 75 percent slopes**

The Candymountain, 30 to 75 percent slopes map unit composition contains: 85% Candymountain and similar soils, 15% minor components (consisting of 3% Ladybird, 3% Footstep, 3% Houda, 2% Cannonball, and 2% Hutsinpillar). This soil type comprises 12.3% of the PSB and is located in the southeast portion of Trinidad on Van Wycke Street and Edwards Street (**Appendix A, Figure 6 and Appendix G**).

Candymountain soils can be found on marine terraces and bluffs, and the parent material is mixed marine deposits. Candymountain consists of fine sandy loam (to 37 inches), above loamy fine sand. Candymountain has an LCC of 7e without irrigation (none specified with irrigation) and is not rated as a hydric soil. Candymountain is well drained, and the depth to water table is more than 80 inches.

### **Halfbluff-Tepona-Urban Land, 2 to 9 percent slopes**

The Halfbluff-Tepona-Urban Land, 2 to 9 percent slopes map unit composition contains: 40% Tepona and similar soils, 35% Halfbluff and similar soils, 15% Urban land, residential, and 10% minor components (consisting of 5% Talawa, 3% Tillas, and 2% Hookton). This soil type comprises 10.4% of the PSB and is located in the northwestern portion of the PSB in the City of Trinidad on Edwards Street and Hector Street (**Appendix A, Figure 6 and Appendix G**).

Halfbluff-Tepona-Urban Land can be found on marine terraces, and the parent material is marine deposits derived from sedimentary rock. Halfbluff-Tepona-Urban Land consists of sandy loam, fine sandy loam, and loamy fine sand. Halfbluff-Tepona-Urban Land has an LCC of 2e without irrigation (none specified with irrigation) and is not rated as a hydric soil. Halfbluff-Tepona-Urban Land is moderately well drained, and the depth to water table is 30 - 39 inches.

## **2.4 Hydrology**

GHD delineated wetlands within the PSB on October 18 and 19, 2022. Rainfall in April 2022 totaled 4.57 inches, which was above average (3.52 inches). Mean annual precipitation in the Project Area ranges from 35 to 90 inches (USDA 2022). Rainfall in the 2022 water year at the Arcata Eureka Airport approximately 5 miles south of the PSB totaled 32.99 inches, which was below normal (46.25 inches) (NOAA 2022).

A WETS table showing climate data for the Arcata Eureka Airport in McKinleyville, California is provided in **Appendix C**. Aerial photography and the National Wetland Inventory Mapper were referenced before conducting fieldwork (**Appendix A, Figure 7**) (NWI 2022). The flood hazard map is also included in **Appendix A, Figure 8** (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.

The perennial Deadman's Creek flows through a culvert underneath the PSB on Westhaven Drive approximately 300 feet north of Fox Farms Road (**Appendix A, Figure 5**). The perennial Luffenholtz Creek is approximately 210 feet southeast of the PSB on Westhaven Drive as mapped by the USFWS National Wetlands Inventory (NWI 2022). The PSB in Trinidad City is within 135 horizontal feet and 80 vertical feet of the Pacific Ocean.

### 3. Results

The PSB contains two three-parameter ditches, and three one-parameter wetland ditches along Westhaven Drive (**Appendix A, Figure 4**). The area of Edwards Street and Van Wycke were visited by the GHD soil scientist and botanist; however, no hydrophytic vegetation or hydrological indicators were present. The likely jurisdictional status of each wetland is presented in **Table 1** below.

**Table 1** Wetlands within the Delineated Area and Potential Jurisdiction

Aquatic Resource Name	Location (lat/long) of point or center of polygon	Aquatic Resource Size (ft <sup>2</sup> )	Jurisdiction		
			USACE	SWRCB	LCP-CCC
Wetland 1 (one-parameter)	41.055759, -124.123987	1,655	No	No	Yes
Wetland 2 (one-parameter)	41.054368, -124.12308	1,150	No	No	Yes
Wetland 3 (three-parameter)	41.052506, -124.12137	1,265	No	Yes	Yes
Wetland 4 (three-parameter)	41.049313, -124.119805	965	Yes	Yes	Yes
Wetland 5 (one-parameter)	41.047315, -124.115691	1,070	No	No	Yes
<b>Total Wetlands in Project Area</b>		<b>6,105 ft<sup>2</sup> (0.14 acre)</b>			

#### 3.1 Three-parameter Wetlands

Wetlands 3 and 4 are palustrine emergent ditches that meet the USACE requirements for three-parameter wetlands. These ditches are located near the center of the Westhaven Drive portion of the PSB and occupy 2,230 ft<sup>2</sup> (0.05 acre) of the PSB. Wetlands 3 and 4 are palustrine emergent ditches.

##### Jurisdiction of Wetland 3

Wetland 3 is drained by a culvert that crosses to the west under Westhaven Drive. This culvert was observed actively draining run-off on December 22, 2022; however, the water was absorbed into the forest approximately 60 feet west of Westhaven Drive. Wetland 3 is not likely to be jurisdictional to the USACE due to the lack of surficial connection to a navigable water.

Wetland 3 is jurisdictional to the North Coast Regional Water Quality Control Board (NCRWQCB), and CCC, as summarized below.

- Wetland 3 is under the jurisdiction of the NCRWCB because it was observed to be an artificial wetland that resulted from historic human activity that has become part of the natural landscape and is not subject to ongoing operation and maintenance (Water of the State definition 3(c)).
- Wetland 3 is within the jurisdiction of the CCC and LCP because it is within the Coastal Zone (see Table 1).

##### Jurisdiction of Wetland 4

Wetland 4 is drained by a culvert that crosses to the west under Westhaven Drive. This culvert extends approximately 160 feet across a private residential property and drains into the canyon of Deadman's Creek. Flow was not observed on December 22, 2022 due to the dense vegetation but the homeowner confirmed that this culvert does flow freely during heavy storm events. Wetland 4 has apparent surficial connection to Deadman's Creek and the Pacific Ocean and is likely jurisdictional to the USACE.

Wetland 4 is jurisdictional to the USACE, the NCRWQCB, and CCC, as summarized below.

- Wetland 4 is a palustrine emergent ditch under the jurisdiction of the USACE because it is hydrologically connected to a navigable waterway (USACE 2020b).
- Wetland 4 is under the jurisdiction of the NCRWCB because it was observed to be an artificial wetland that resulted from historic human activity that has become part of the natural landscape and is not subject to ongoing operation and maintenance (Water of the State definition 3(c)).
- Wetland 4 is within the jurisdiction of the CCC and LCP because it is within the Coastal Zone (see Table 1).

## 3.2 One-parameter Wetlands

Wetlands 1, 2, and 5 are ditches that meet the Coastal Commission and LCP requirements for one-parameter wetlands due to the presence of hydrophytic vegetation. None of these wetlands contained hydric soils. One-parameter wetlands within the PSB occupy 3,875 ft<sup>2</sup> (0.09 acre). These wetlands are not jurisdictional to the USACE or the NCRWQCB but are jurisdictional to the CCC because they are within the Coastal Zone and are considered one-parameter wetlands under the LCP.

## 4. Conclusions

The wetland delineation for the Trinidad Water System Drought Resiliency Project determined the extent of wetlands within the PSB 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). Three one-parameter wetlands (1, 2, and 5) were observed in the Coastal Zone with a total area of 3,875 ft<sup>2</sup> (0.09 acre) within the PSB. Two wetlands (3 and 4) in the PSB qualified as three-parameter palustrine emergent ditches with a total area of 2,230 ft<sup>2</sup> (0.05 acre). Wetland 4 has surficial hydrological connection with a navigable water, and therefore is regulated by the USACE, NCRWQCB, and the CCC (**Appendix A, Figure 4**). Wetland 3 does not have apparent surficial connection to a navigable water and is therefore regulated by the NCRWQCB and the CCC. All wetlands in the PSB are within the Coastal Zone and are regulated under the Coastal Act and LCP. 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 City of Trinidad. The City of Trinidad may only use and rely on this report for the purpose agreed upon between GHD and the City of Trinidad, 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 City of Trinidad 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 October 18 and 19, 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 City of Trinidad and may only be used and relied on by City of Trinidad for the purpose agreed between GHD and City of Trinidad as set out in section 5.1 of this report.*

*GHD otherwise disclaims responsibility to any person other than City of Trinidad 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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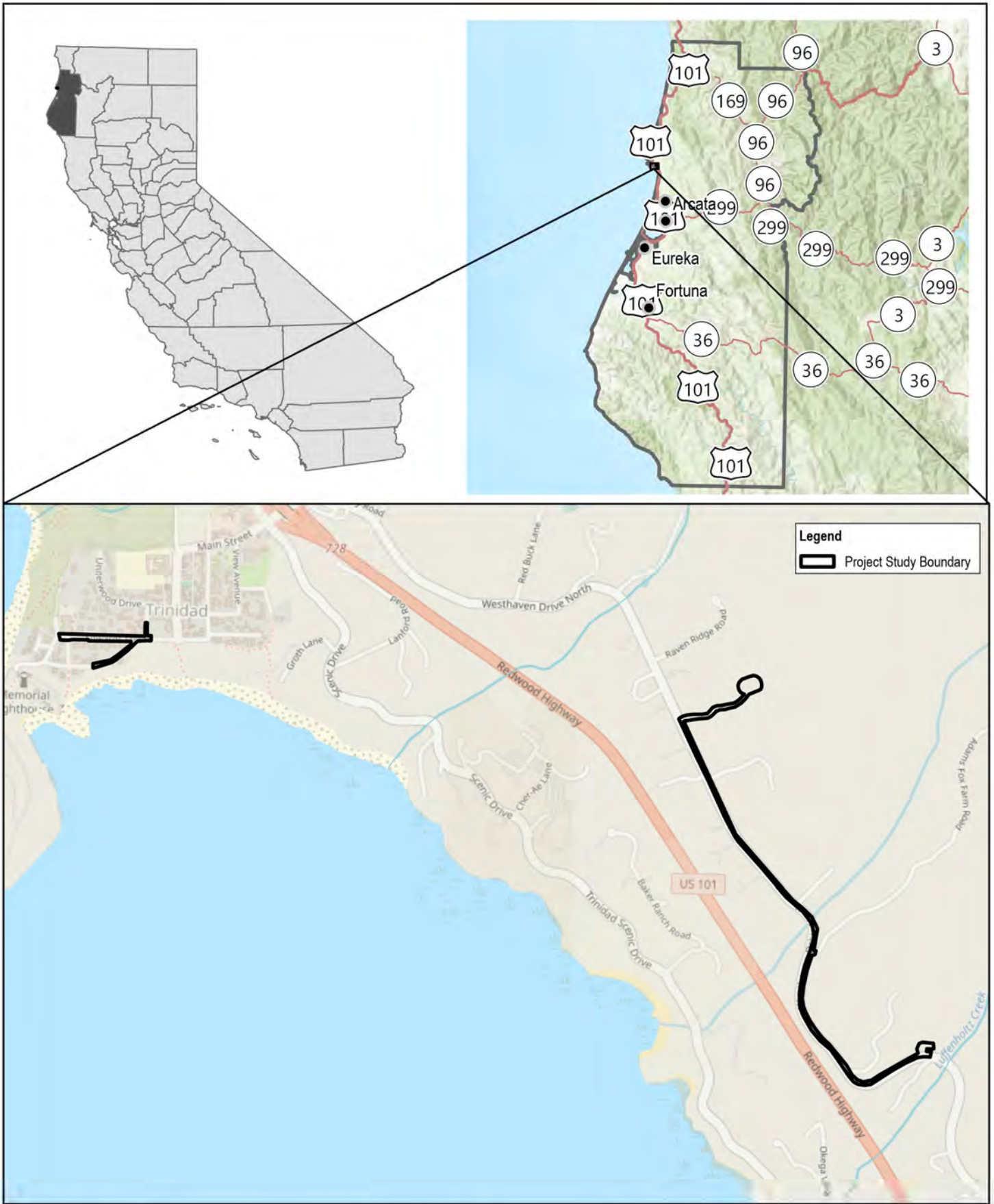


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# Appendices

# Appendix A

## Figures



Paper Size ANSI A  
0 400 800 1,200 1,600  
Feet

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



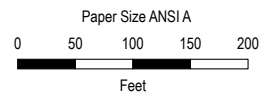
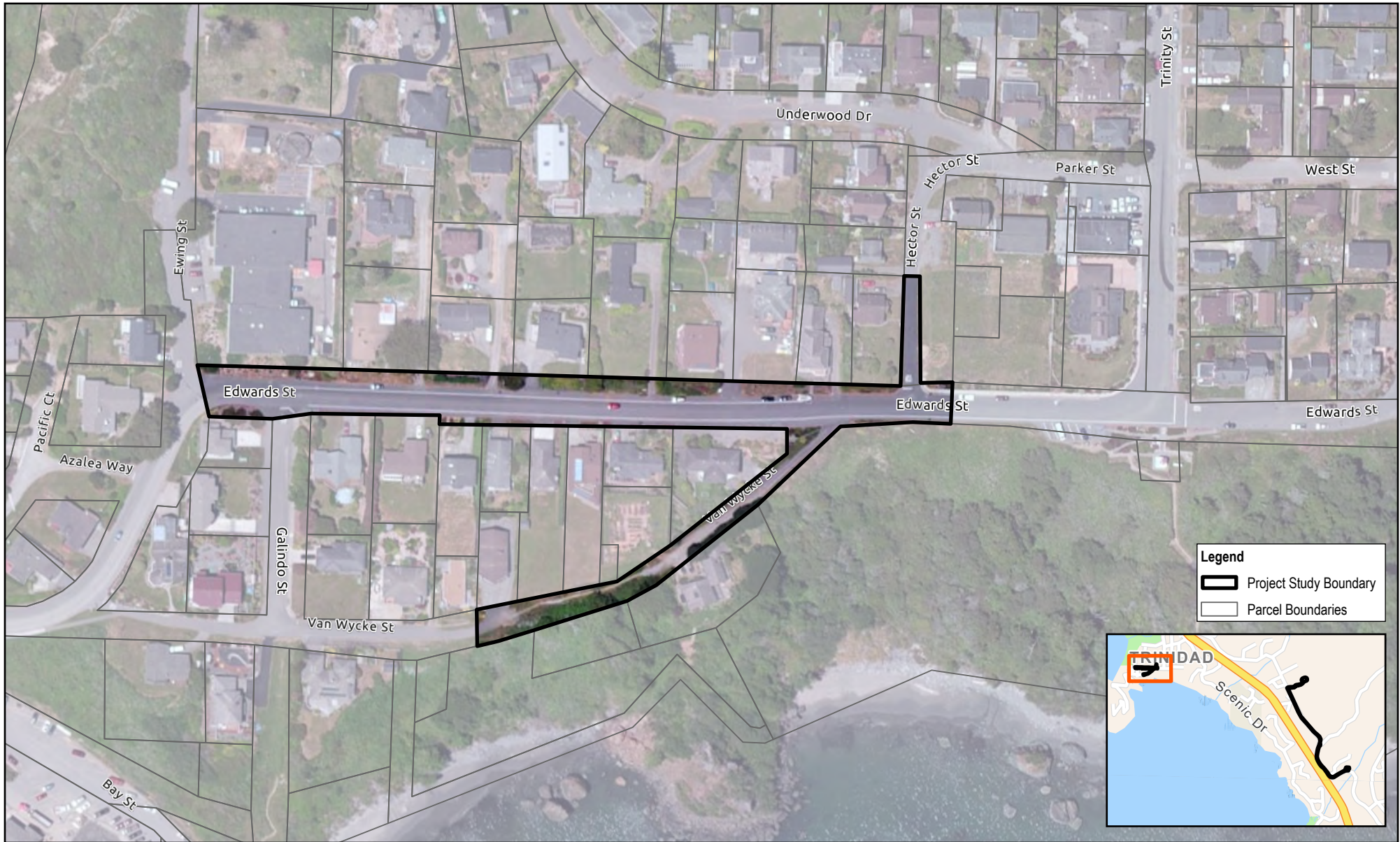
**City of Trinidad  
Water Tank and Pipeline  
Replacement Project**

Project No. 12591317  
Revision No. -  
Date 10/31/2022

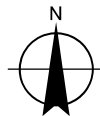
**Vicinity Map**

**FIGURE 1**





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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 11/7/2022

**Project Study Boundary  
and Biological Study Area**

**FIGURE 2.1**



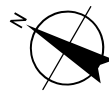


Paper Size ANSI A

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Feet

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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

**Project Study Boundary  
and Biological Study Area**

Project No. 12591317  
Revision No. -  
Date 11/7/2022

**FIGURE 2.2**





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



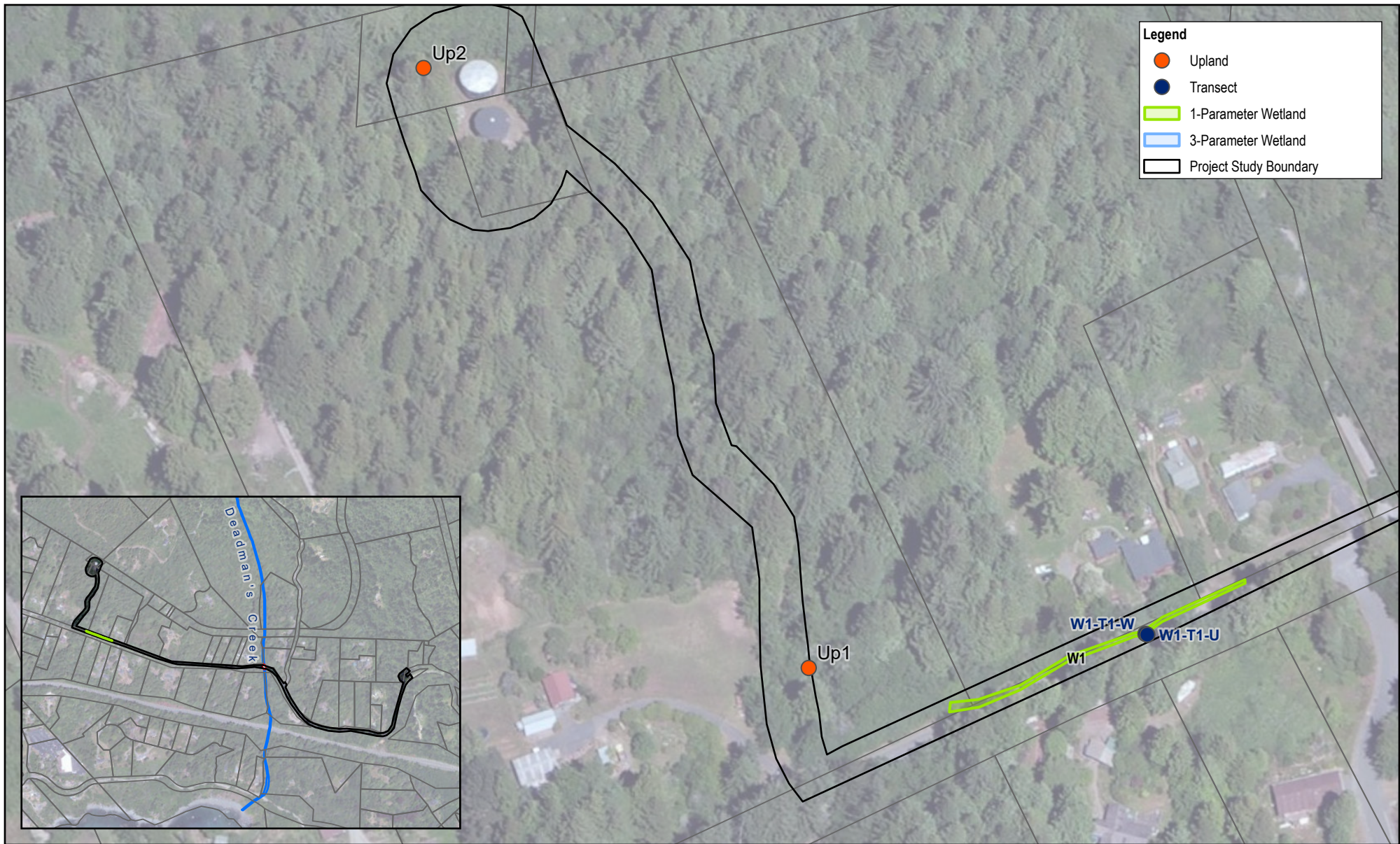
City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 12/16/2022

Coastal Zone

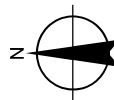
**FIGURE 3**





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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 12/14/2022

Wetlands

**FIGURE 4.1**





Paper Size ANSI A  
0 10 20 30 40 50  
Feet

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



**City of Trinidad  
Water Tank and Pipeline  
Replacement Project**

Project No. 12591317  
Revision No. -  
Date 12/14/2022

**Wetlands**

**FIGURE 4.2**





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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 12/14/2022

Wetlands

**FIGURE 4.3**





Paper Size ANSI A  
0 10 20 30 40 50  
Feet

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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 12/14/2022

Wetlands

FIGURE 4.4





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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 12/14/2022

Wetlands

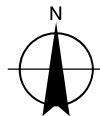
**FIGURE 4.5**





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Feet

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



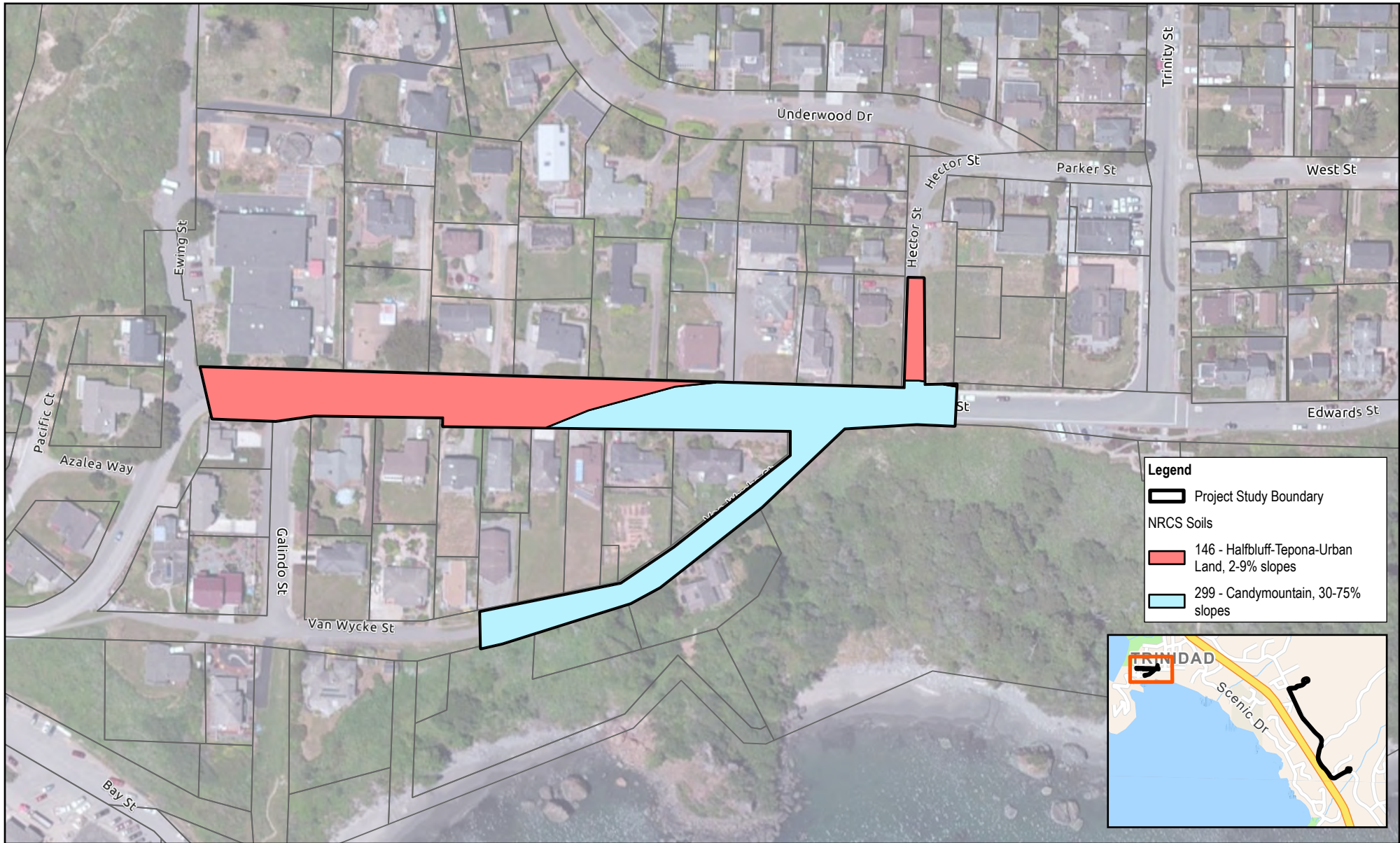
City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 12/1/2022

Riparian Vegetation

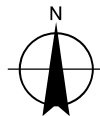
FIGURE 5





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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 11/7/2022

NRCS Soils

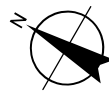
**FIGURE 6.1**





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



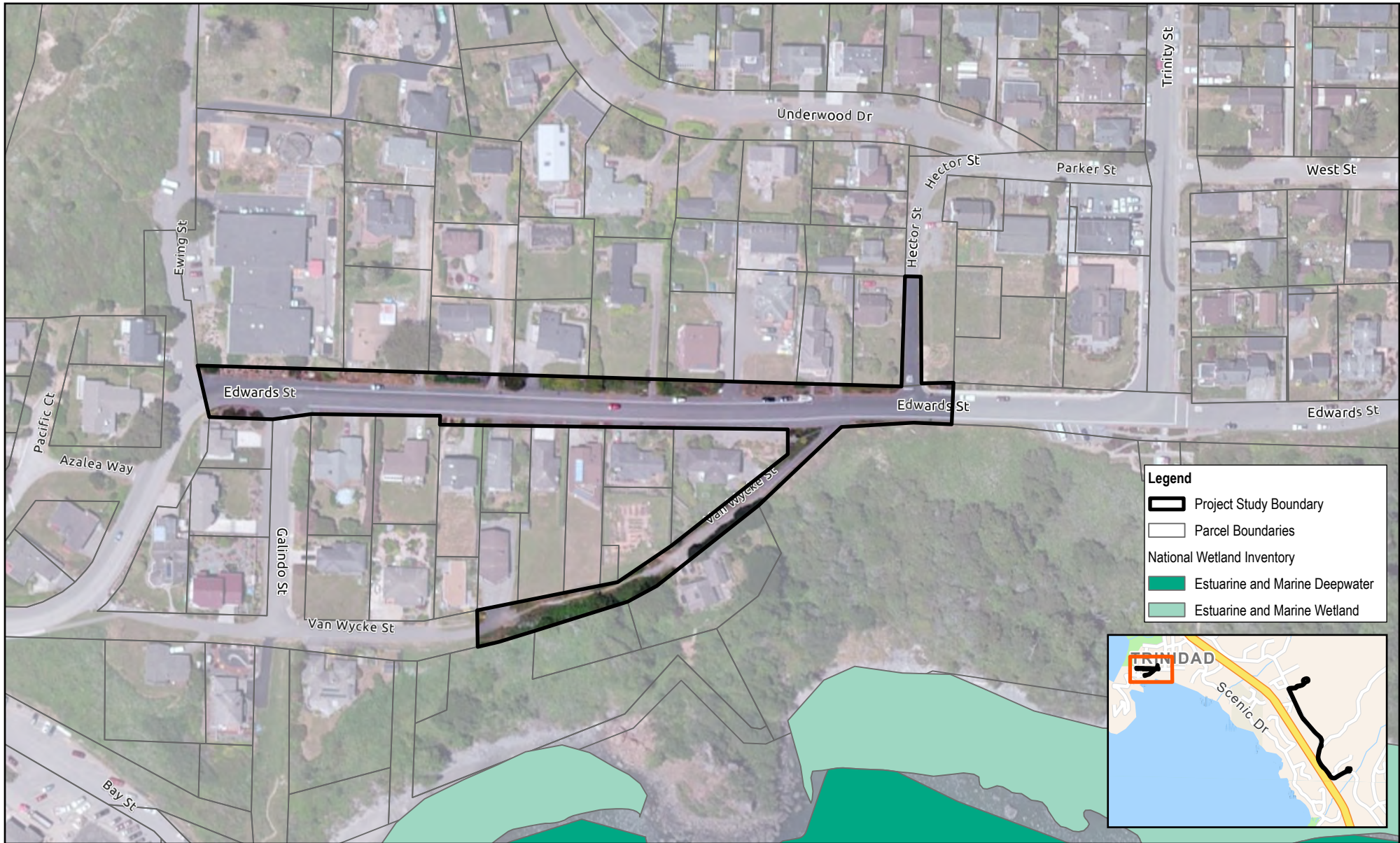
**City of Trinidad  
Water Tank and Pipeline  
Replacement Project**

Project No. 12591317  
Revision No. -  
Date 11/7/2022

**NRCS Soils**

**FIGURE 6.2**





Paper Size ANSI A  
0 60 120 180  
Feet

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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 11/7/2022

National Wetland Inventory

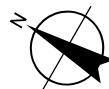
FIGURE 7.1





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



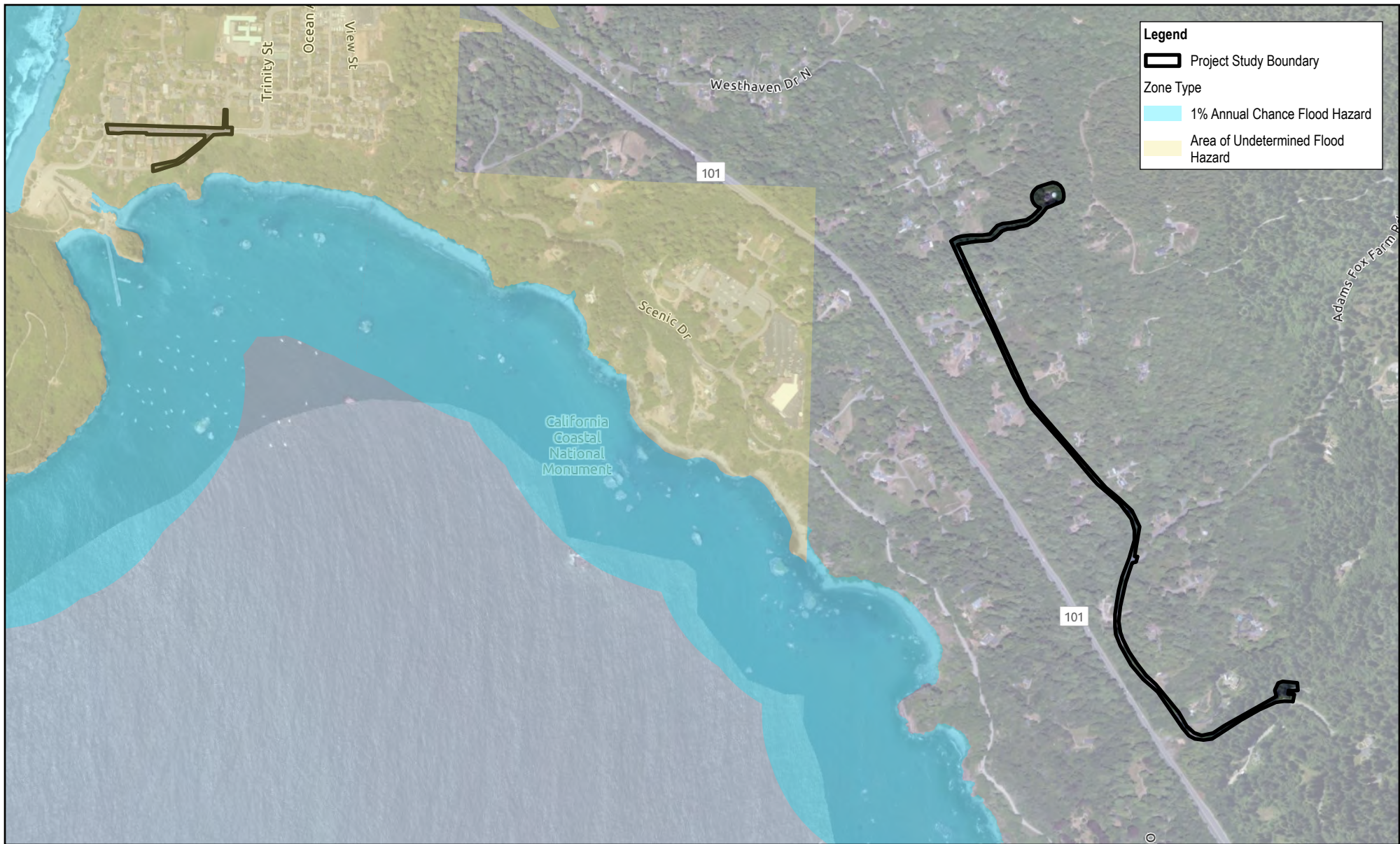
City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 11/7/2022

National Wetland Inventory

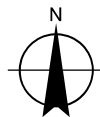
FIGURE 7.2





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



City of Trinidad  
Water Tank and Pipeline  
Replacement Project

Project No. 12591317  
Revision No. -  
Date 11/7/2022

FEMA Flood Hazard Zones

FIGURE 8



# **Appendix B**

## **Data Sheets**

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

Project/Site: Trinidad Water System City/County: Trinidad/Humboldt Sampling Date: 10/18/22  
 Applicant/Owner: Trinidad City State: CA Sampling Point: UPI  
 Investigator(s): Jane Cipra, Kerry MacNamee Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): Ditch 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>		
Remarks: <u>Small ditch carrying runoff from culvert under road</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	<u>10</u>		<u>FACU</u>	
2. <u>Tsuga heterophylla</u>	<u>40</u>	<u>yes</u>	<u>FACU</u>	
3. <u>Alnus rubra</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
4. _____	<u>70</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>5 m</u> )				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 = _____
1. <u>Cornus</u>	<u>30</u>	<u>yes</u>	<u>UPL</u>	
2. _____				
3. _____				
4. _____				
5. _____				
Herb Stratum (Plot size: <u>1 m</u> )				
1. <u>Polystichum monitum</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
Woody Vine Stratum (Plot size: <u>1 m</u> )				
1. <u>Rubus ursinus</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				
Remarks:				

Western Mountains, Valleys, and Coast – Version 2.0

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

Project/Site: Trinidad Water System City/County: Trinidad/Humboldt Sampling Date: 10/18/22  
 Applicant/Owner: Trinidad State: CA Sampling Point: UP2  
 Investigator(s): J. Cipra, K. MacNamee Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): terrace 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>Wide depression, old railroad grade, sparsely vegetated</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1. <u>Alnus rubra</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Sequoia sempervirens</u>	<u>15</u>	<u>yes</u>	<u>UPL</u>	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 = _____
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ 5 - Wetland Non-Vascular Plants <sup>1</sup> ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
= Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 m</u> )				
1. <u>Cotoneaster sp.</u>	<u>10</u>	<u>yes</u>	<u>UPL</u>	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
= Total Cover				
Herb Stratum (Plot size: <u>1 m</u> )				
1. _____	<u>10</u>	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
= Total Cover				
Woody Vine Stratum (Plot size: <u>1 m</u> )				
1. <u>Rubus ursinus</u>	<u>2</u>	_____	<u>FACU</u>	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. <u>Hedera helix</u>	<u>1</u>	_____	_____	
= Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
= Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks: \_\_\_\_\_

Up-2

## HYDROLOGY

Secondary Indicators (2 or more required)

Western Mountains, Valleys, and Coast – Version 2.0



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

Project/Site: Trinidad water System City/County: Trinidad/Humboldt Sampling Date: 12/18/22  
 Applicant/Owner: Trinidad city State: CA Sampling Point: WI-T1-W  
 Investigator(s): J. Cipra Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Road side 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: <u>Road side ditch with 20 linear feet of wetland veg- 1-par wetland</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: _____)</b> 1. <u>Ranunculus repens</u> <u>10</u> <u>yes</u> <u>FAC</u> 2. <u>Veronica americana</u> <u>15</u> <u>yes</u> <u>OBL</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b> 1. <u>Rubus armenianus</u> <u>1</u> <u>FAC</u> 2. <u>Rubus ursinus</u> <u>1</u> <u>FACU</u> _____ = Total Cover				
<b>% Bare Ground in Herb Stratum</b> _____				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

Sampling Point: W1-T1-W

 $(1-pa)$ HYDROLOGYWestern Mountains, Valleys, and Coast – Version 2.0

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

Project/Site: Trinidad Water System City/County: Trinidad/Humboldt Sampling Date: 10/18/22  
 Applicant/Owner: Trinidad City State: CA Sampling Point: WI-TI-U  
 Investigator(s): J. Cipra, K. MacNamee Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Road side Local relief (concave, convex, none): slope Slope (%): 30  
 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>Roadside veg above ditch</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)	
1. <u>Pseudotsuga Menziesii</u>	<u>25</u>	<u>yes</u>	<u>FACU</u>		
2. _____	_____	_____	_____	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 = _____	
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
= Total Cover					
Sapling/Shrub Stratum (Plot size: _____)					
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0' 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
= Total Cover					
Herb Stratum (Plot size: _____)					
1. <u>Ranunculus repens</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>		
2. <u>Euphorbia peplos</u>	<u>1</u>	_____	<u>UPL</u>		
3. <u>Rumex crispus</u>	<u>1</u>	_____	<u>FAC</u>		
4. <u>Lapsana communis</u>	<u>2</u>	_____	<u>FACU</u>		
5. <u>Epilobium ciliatum</u>	<u>2</u>	_____	<u>FACW</u>		
6. <u>Geranium robertianum</u>	<u>2</u>	_____	<u>FACU</u>		
7. <u>Crastium alomeratum</u>	<u>1</u>	_____	<u>FACU</u>		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
19 = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

WI-TI-U

(1 par)

[illegible]

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- <sup>2</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes \_\_\_\_\_ No ☒

toe of slope of roadside ditch

Primary Indicators (12 or more required)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Wetland Hydrology Present? Yes \_\_\_\_\_ No X

above ditch

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

Project/Site: Trinidad Water System City/County: Trinidad/Humboldt Sampling Date: 10/18/22  
 Applicant/Owner: Trinidad City State: CA Sampling Point: W2-T1-W  
 Investigator(s): J. Cipa, K. MacNamee Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): Ditch 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Remarks: <u>Roadside ditch, not hydrologically connected to W1</u>				

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
1. <u>Sequoia sempervirens</u>	<u>20</u>	<u>yes</u>	<u>UPL</u>	
2. <u>Alnus rubra</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	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 = _____
4. _____	_____	_____	_____	
= Total Cover				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 m</u> )				
1. <u>Salix lasiolepis</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. <u>Cotoneaster sp.</u>	<u>2</u>	_____	_____	
3. _____	_____	_____	_____	Remarks:
4. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>1 m</u> )				
1. <u>Carex douglasii</u>	<u>10</u>	<u>yes</u>	<u>DBL</u>	Remarks:
2. <u>Isolepis cernua</u>	<u>10</u>	<u>yes</u>	<u>OBL</u>	
3. <u>Trifolium dubium</u>	<u>1</u>	_____	<u>FACU</u>	Remarks:
4. _____	_____	_____	_____	
= Total Cover				
Woody Vine Stratum (Plot size: <u>1 m</u> )				
1. <u>Hedera helix</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	Remarks:
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____				



Sampling Point: W2-T1-W

HYDROLOGY

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

- | Primary Indicators (12 or more required)                           |  | Secondary Indicators (2 or more required)                          |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9) (except             | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2,     |
| <input type="checkbox"/> High Water Table (A2)                     | <b>MLRA 1, 2, 4A, and 4B)</b>  | <b>4A, and 4B)</b>   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Salt Crust (B11)                              | <input checked="" type="checkbox"/> Drainage Patterns (B10)        |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Aquatic Invertebrates (B13)                   | <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input checked="" type="checkbox"/> Geomorphic Position (D2)       |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)                 | <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    | <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)       | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)            |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                    | <input type="checkbox"/> Frost-Heave Hummocks (D7)                 |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |  |  |

Surface Water Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes X No     

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

Remarks:

roadside ditch

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

Project/Site: Trinidad Water System City/County: Trinidad/Humboldt Sampling Date: 10/18/22  
 Applicant/Owner: Trinidad City State: CA Sampling Point: W2-T1-U  
 Investigator(s): J. Cipra, K. MacNamee 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>Vegetation above ditch</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20%</u> (A/B)
1. <u>Sequoia sempervirens</u>	<u>15</u>	<u>yes</u>	<u>UPL</u>	
2. <u>Alnus rubra</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> 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 = _____
1. <u>Cotoneaster sp.</u>	<u>3</u>	<u>yes</u>	<u>UPL</u>	
2. <u>Fraxinus purshiana</u>	<u>1</u>	_____	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>4</u> = Total Cover				
Herb Stratum (Plot size: <u>1 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Anthoxanthum odoratum</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Holcus lanatus</u>	<u>2</u>	_____	<u>FAC</u>	
3. <u>Trifolium dubium</u>	<u>3</u>	_____	<u>FACU</u>	
4. <u>Lotus corniculatus</u>	<u>1</u>	_____	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>16</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>1 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
1. <u>Hedera helix</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Rubus ursinus</u>	<u>3</u>	_____	<u>FACU</u>	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

Sampling Point: W2-T1-U

W2-T1-U

[illegible]<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes No ☒

Remarks:

dry, uniform soil

## Wetland Hydrology Indicators:

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

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

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? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

on shelf of land above ditch

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

Project/Site: Trinidad Water System City/County: Trinidad/Humboldt Sampling Date: 10/18/22  
 Applicant/Owner: City of Trinidad State: CA Sampling Point: W3-T1-W  
 Investigator(s): J. Cipa, K. MacNamee Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): Ditch 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 <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes _____	No _____		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____		
Remarks: <u>Very wet ditch, ends nearby in culvert that crosses with Dr.</u>				

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
1. <u>Abies grandis</u>	<u>30</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Sequoia sempervirens</u>	<u>10</u>	<u>yes</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>40</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>5 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Prevalence Index worksheet:</b> 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 = _____
1. <u>Ceanothus velutinus</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Salix lasiolepis</u>	<u>2</u>	_____	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>22</u> = Total Cover				
Herb Stratum (Plot size: <u>1 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Carex obnupta</u>	<u>20</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Oenanthe sarmentosa</u>	<u>40</u>	<u>yes</u>	<u>OBL</u>	
3. <u>Equisetum telmateia</u>	<u>1</u>	_____	_____	
4. <u>Ranunculus repens</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>81</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>1 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____	_____	_____	_____	
<u>_____</u> = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

Sampling Point: W3-T1-W

Sampling Point:

W3-T1-W

[illegible]<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No ☐

Remarks:

redox features present

## Wetland Hydrology Indicators:

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

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

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? Yes ☒ No ☐ Depth (inches): 15

(includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks:

drainage ditch



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

Project/Site: Trinidad Water System City/County: Trinidad/Humboldt Sampling Date: 10/18/22  
 Applicant/Owner: Trinidad City State: CA Sampling Point: W3-T1-U  
 Investigator(s): J. Cipra, K. MacNamee Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): Ditch 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>veg above ditch.</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25%</u> (A/B)
1. <u>Abies grandis</u>	<u>30</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Sequoia sempervirens</u>	<u>10</u>	<u>yes</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: <u>5 m</u> ) 1. <u>Gaultheria shallon</u> <u>20</u> <u>yes</u> <u>FACU</u> 2. <u>Salix lasiolepis</u> <u>2</u> <u>0</u> <u>FACW</u> 3. _____ 4. _____ 5. _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Viola sempervirens</u> <u>20</u> <u>yes</u> <u>UPL</u> 2. <u>Pteridium aquilinum</u> <u>5</u> _____ <u>FACU</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ = Total Cover				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ = Total Cover % Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				
Remarks:				

W3-T1-U

HYDROLOGY

## Wetland Hydrology Indicators:

Western Mountains, Valleys, and Coast – Version 2.0

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

Project/Site: Trinidad Water System City/County: Trinidad/Humboldt Sampling Date: 10/18/22  
 Applicant/Owner: Trinidad City State: CA Sampling Point: W4-T1-W  
 Investigator(s): J. Cipra, K. MacNamee 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>3-par wetland - hydric soils are present</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>Salix lasiolepis</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Myrica californica</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>	
3. _____	_____	_____	_____	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 = _____
4. _____	_____	_____	_____	
= Total Cover				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Fraxinus perstriana</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Ranunculus repens</u>	<u>50</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Plantago lanceolata</u>	<u>1</u>	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
3. <u>Isolopis cernua</u>	<u>3</u>	_____	_____	
4. <u>Holcus lanatus</u>	<u>5</u>	_____	<u>FAC</u>	
5. <u>Rumex crispus</u>	<u>1</u>	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
= Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
= Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
% Bare Ground in Herb Stratum _____				
Remarks:				



## 5

W4-T1-W

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

[illegible]

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

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

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                         | <input type="checkbox"/> 2 cm Muck (A10)                  |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                     | <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                 | <input type="checkbox"/> Other (Explain in Remarks)       |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3)          |   |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                  |   |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Depleted Dark Surface (F7)               |   |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox Depressions (F8)                   |   |

Restrictive Layer (if present):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ~~X~~ No   

Remarks:

Remarks: Upper horizon contains patches of clay w/ a lot of redox.  
Lower horizon very sandy.

## HYDROLOGY

### Wetland Hydrology Indicators:

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

- | Primary Indicators (1 or more required)                            |   | Secondary Indicators (2 or more required)                                  |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Salt Crust (B11)   | <input checked="" type="checkbox"/> Drainage Patterns (B10)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                              | <input type="checkbox"/> Dry-Season Water Table (C2)                       |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                               | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)         |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)            | <input checked="" type="checkbox"/> Geomorphic Position (D2)               |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                            | <input type="checkbox"/> Shallow Aquitard (D3)                             |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)               | <input type="checkbox"/> FAC-Neutral Test (D5)                             |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)                  | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)                    |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Other (Explain in Remarks)                               | <input type="checkbox"/> Frost-Heave Hummocks (D7)                         |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |  |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |  |

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No \_\_\_\_\_ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☐ Depth (inches): \_\_\_\_\_

Saturation Present? Yes \_\_\_\_\_ No \_\_\_\_\_ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

Wetland Hydrology Present? Yes X No     

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

Remarks:

drainage ditch

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

Project/Site: Trinidad Water System City/County: Trinidad/Humboldt Sampling Date: 10/19/22  
 Applicant/Owner: Trinidad City State: CA Sampling Point: W5-T1-W  
 Investigator(s): J. Cipra, K. McNamara 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	
Remarks: <u>Roadside ditch, trees not included because they are 6' above ditch</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0' <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>1m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Ranunculus repens</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Rumex crispus</u>	<u>10</u>		<u>FAC</u>	
3. <u>Trifolium pratense</u>	<u>2</u>		<u>FACU</u>	
4. <u>Holcus lanatus</u>	<u>18</u>	<u>yes</u>	<u>FAC</u>	
5. <u>Hypochaeris radicata</u>	<u>1</u>		<u>FACU</u>	
6. <u>Calopus aragrostis</u>	<u>5</u>		<u>OBL</u>	
7. <u>Danens carota</u>	<u>2</u>			
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
Woody Vine Stratum (Plot size: <u>1m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
% Bare Ground in Herb Stratum	_____			
Remarks:				



Sampling Point: WS-F1-W

HYDROLOGY

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

- Field Observations:**

Wetland Hydrology Present? Yes X No

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

Remarks:

in a drainage ditch.

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

Project/Site: Trinidad City/County: Trinidad/Humboldt Sampling Date: 10/19/22  
 Applicant/Owner: City of Trinidad State: CA Sampling Point: W5-TI-1  
 Investigator(s): J. Cipra, K. McNamara 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>Road shoulder above ditch</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>1m</u>)</b> 1. <u>Daucus carota</u> <u>1</u> <u>FACU</u> 2. <u>Rumex crispus</u> <u>5</u> <u>FACU</u> 3. <u>Hypochaeris radicata</u> <u>10</u> <u>FACU</u> 4. <u>Dactylis glomerata</u> <u>40</u> <u>FACU</u> 5. <u>Rumex crispus</u> <u>10</u> <u>FAC</u> 6. <u>Plantago lanceolata</u> <u>5</u> <u>FACU</u> 7. <u>Anthriscus odoratum</u> <u>20</u> <u>FACU</u> 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>1m</u>)</b> 1. <u>Rubus ursinus</u> <u>2</u> <u>FACU</u> 2. _____ _____ = Total Cover				
<b>% Bare Ground in Herb Stratum</b> _____				
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>				
Remarks:				

## SOIL

Sampling Point

WS-TI-U

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	5Y 2.5/1	70%					loam	10% OM
1-12	5Y 3/2	100%					sandy clay loam	

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

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

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 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)

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

<sup>3</sup>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:

dry, brittle, no redoximorphic features

## 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:

on road shoulder, above drainage ditch. No hydrology indicators present.

# **Appendix C**

**Record of Climatological Observations and  
WETS Table**

# McKinleyville WETS Table

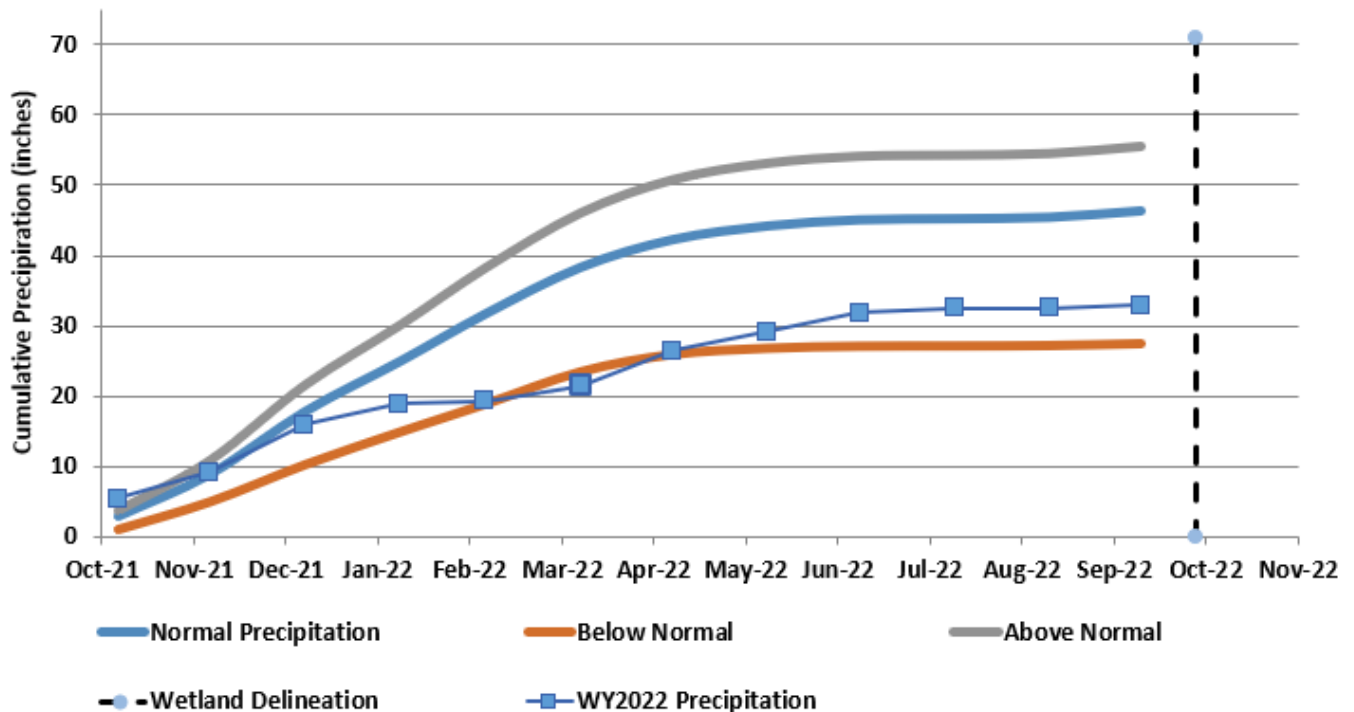
Name ARCATA EUREKA AIRPORT, CA US

Loc. (Lat/Lon): 40.97806°, -124.10861°

Monthly Precipitation (All values in inches)					Cumulative Precipitation (All values in inches)			
Month	Normal <sup>1</sup>	Below Normal <sup>1</sup>	Above Normal <sup>1</sup>	Actual WY 2022 <sup>2</sup>	Normal <sup>1</sup>	Below Normal <sup>1</sup>	Above Normal <sup>1</sup>	Actual WY 2022 <sup>2</sup>
31-Oct	2.99	1.09	3.60	5.40	2.99	1.09	3.60	5.40
30-Nov	5.96	3.94	7.15	3.79	8.95	5.03	10.75	9.19
31-Dec	8.86	5.28	10.75	6.73	17.81	10.31	21.50	15.92
31-Jan	7.11	4.65	8.54	2.92	24.92	14.96	30.04	18.84
28-Feb	6.75	4.00	8.20	0.41	31.67	18.96	38.24	19.25
31-Mar	6.58	4.58	7.82	2.18	38.25	23.54	46.06	21.43
30-Apr	3.92	2.47	4.73	5.07	42.17	26.01	50.79	26.50
31-May	1.94	0.88	2.36	2.64	44.11	26.89	53.15	29.14
30-Jun	0.87	0.29	1.00	2.73	44.98	27.18	54.15	31.87
31-Jul	0.16	0.04	0.16	0.60	45.14	27.22	54.31	32.47
31-Aug	0.20	0.06	0.23	0.00	45.34	27.28	54.54	32.47
30-Sep	0.91	0.27	1.02	0.52	46.25	27.55	55.56	32.99

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>

**Eureka WY 2022 Precipitation WETS Table**  
Actual vs. Normal





# **Appendix D**

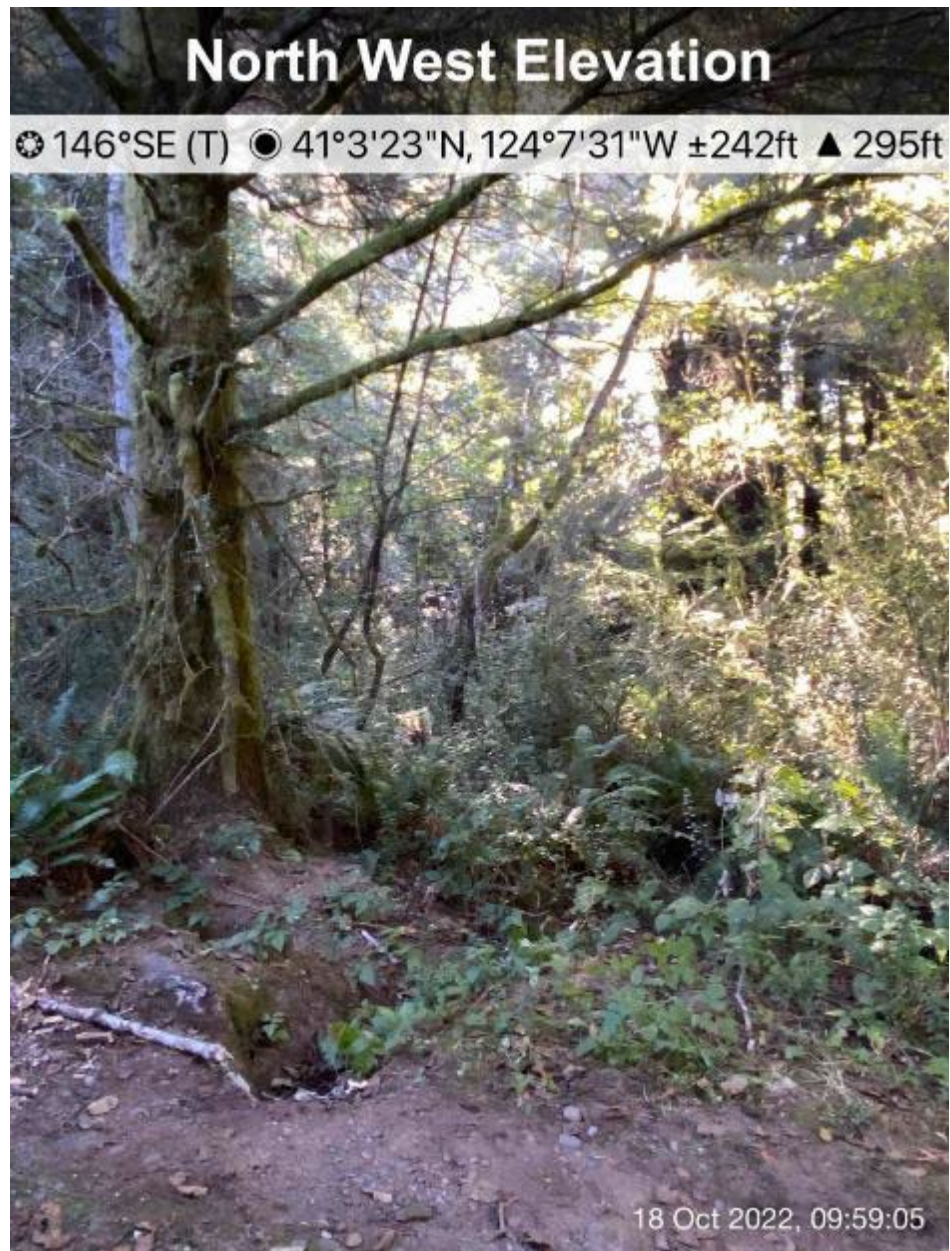
## **On-site Plant list**

Scientific Name	Common Name	Status	Family	Status
<i>Sambucus nigra</i>	elderberry	Native	Adoxaceae	FAC
<i>Daucus pusillus</i>	wild carrot	Native	Apiaceae	FACU
<i>Oenanthe sarmentosa</i>	water parsley	Native	Apiaceae	OBL
<i>Lysichiton americanus</i>	skunk cabbage	Native	Araceae	OBL
<i>Hedera helix</i>	English ivy	Non-native	Araliaceae	FACU
<i>Achillea millefolium</i>	yarrow	Native	Asteraceae	FACU
<i>Baccharis pilularis</i>	Coyote brush	Native	Asteraceae	UPL
<i>Helminthotheca echioides</i>	prickly oxtongue	Non-native	Asteraceae	FAC
<i>Hypochaeris radicata</i>	rough cat's ear	Non-native	Asteraceae	FACU
<i>Lapsana communis</i>	nipplewort	Non-native	Asteraceae	FACU
<i>Sonchus oleraceus</i>	prickly lettuce	Non-native	Asteraceae	UPL
<i>Athyrium filix-femina</i>	lady fern	Native	Athyriaceae	FAC
<i>Alnus rubra</i>	red alder	Native	Betulaceae	FAC
<i>Raphanus raphanistrum</i>	wild radish	Non-native	Brassicaceae	
<i>Lonicera involucrata</i>	twinberry	Native	Caprifoliaceae	FAC
<i>Cerastium glomeratum</i>	sticky mouse-ear chickweed	Non-native	Caryophyllaceae	FACU
<i>Sequoia sempervirens</i>	coast redwood	Native	Cupressaceae	UPL
<i>Carex obnupta</i>	slough sedge	Native	Cyperaceae	OBL
<i>Cyperus eragrostis</i>	tall flatsedge	Native	Cyperaceae	FACW
<i>Isolepis cernua</i>	fiber optic grass	Native	Cyperaceae	OBL
<i>Pteridium aquilinum</i>	brackenfern	Native	Dennstaedtiaceae	FACU
<i>Polystichum munitum</i>	Western sword fern	Native	Dryopteridaceae	FACU
<i>Equisetum telmateia</i>	great horsetail	Native	Equisetaceae	FACW
<i>Gaultheria shallon</i>	salal	Native	Ericaceae	FACU
<i>Vaccinium ovatum</i>	evergreen huckleberry	Native	Ericaceae	FACU
<i>Vaccinium parviflorum</i>	red huckleberry	Native	Ericaceae	FACU
<i>Euphorbia peplus</i>	petty spurge	Non-native	Euphorbiaceae	UPL
<i>Lotus corniculatus</i>	bird's-foot trefoil	Non-native	Fabaceae	FAC
<i>Trifolium dubium</i>	lesser trefoil	Non-native	Fabaceae	FACU
<i>Trifolium pratense</i>	red clover	Non-native	Fabaceae	FACU
<i>Geranium robertianum</i>	herb-robert	Non-native	Geraniaceae	FACU
<i>Crocsmia sp.</i>	crocsmia	Non-native	Iridaceae	FAC
<i>Juncus sp.</i>	(not flowering)	Native	Juncaceae	
<i>Myrica californica</i>	wax myrtle	Native	Myricaceae	FACW
<i>Epilobium ciliatum</i>	Northern willow herb	Native	Onagraceae	FACW
<i>Abies grandis</i>	grand fir	Native	Pinaceae	FACU
<i>Picea sitchensis</i>	Sitka spruce	Native	Pinaceae	FAC

Scientific Name	Common Name	Status	Family	Status
<i>Pinus radiata</i>	Monterey pine	Non-native	Pinaceae	UPL
<i>Pseudotsuga menziesii</i>	Douglas fir	Native	Pinaceae	FACU
<i>Tsuga heterophylla</i>	Hemlock	Native	Pinaceae	FACU
<i>Plantago lanceolata</i>	ribwort plantain	Non-native	Plantaginaceae	FAC
<i>Plantago major</i>	broadleaf plantain	Non-native	Plantaginaceae	FACU
<i>Veronica americana</i>	American brooklime	Non-native	Plantaginaceae	OBL
<i>Agrostis stolonifera</i>	creeping bentgrass	Non-native	Poaceae	FAC
<i>Anthoxanthum odoratum</i>	vernal sweet grass	Non-native	Poaceae	FACU
<i>Avena sativa</i>	oats	Non-native	Poaceae	UPL
<i>Cortaderia jubata</i>	pampas grass	Non-native	Poaceae	FACU
<i>Dactylus glomerata</i>	orchard grass	Non-native	Poaceae	FACU
<i>Holcus lanatus</i>	soft chess	Non-native	Poaceae	FAC
<i>Rumex crispus</i>	curly dock	Non-native	Polygonaceae	FAC
<i>Ranunculus repens</i>	buttercup	Non-native	Ranunculaceae	FAC
<i>Rhamnus purshiana</i>	cascara	Native	Rhamnaceae	FAC
<i>Cotoneaster sp.</i>	cotoneaster	Non-native	Rosaceae	
<i>Potentilla anserina</i>	silverweed	Native	Rosaceae	OBL
<i>Rubus armeniacus</i>	Himalayan blackberry	Non-native	Rosaceae	FAC
<i>Rubus parviflorus</i>	thimbleberry	Native	Rosaceae	FACU
<i>Rubus ursinus</i>	California blackberry	Native	Rosaceae	FACU
<i>Gallium aparine</i>	cleavers	Non-native	Rubiaceae	FACU
<i>Salix lasiolepis</i>	Arroyo willow	Native	Salicaceae	FACW
<i>Viola sempervirens</i>	redwood violet	Native	Violaceae	

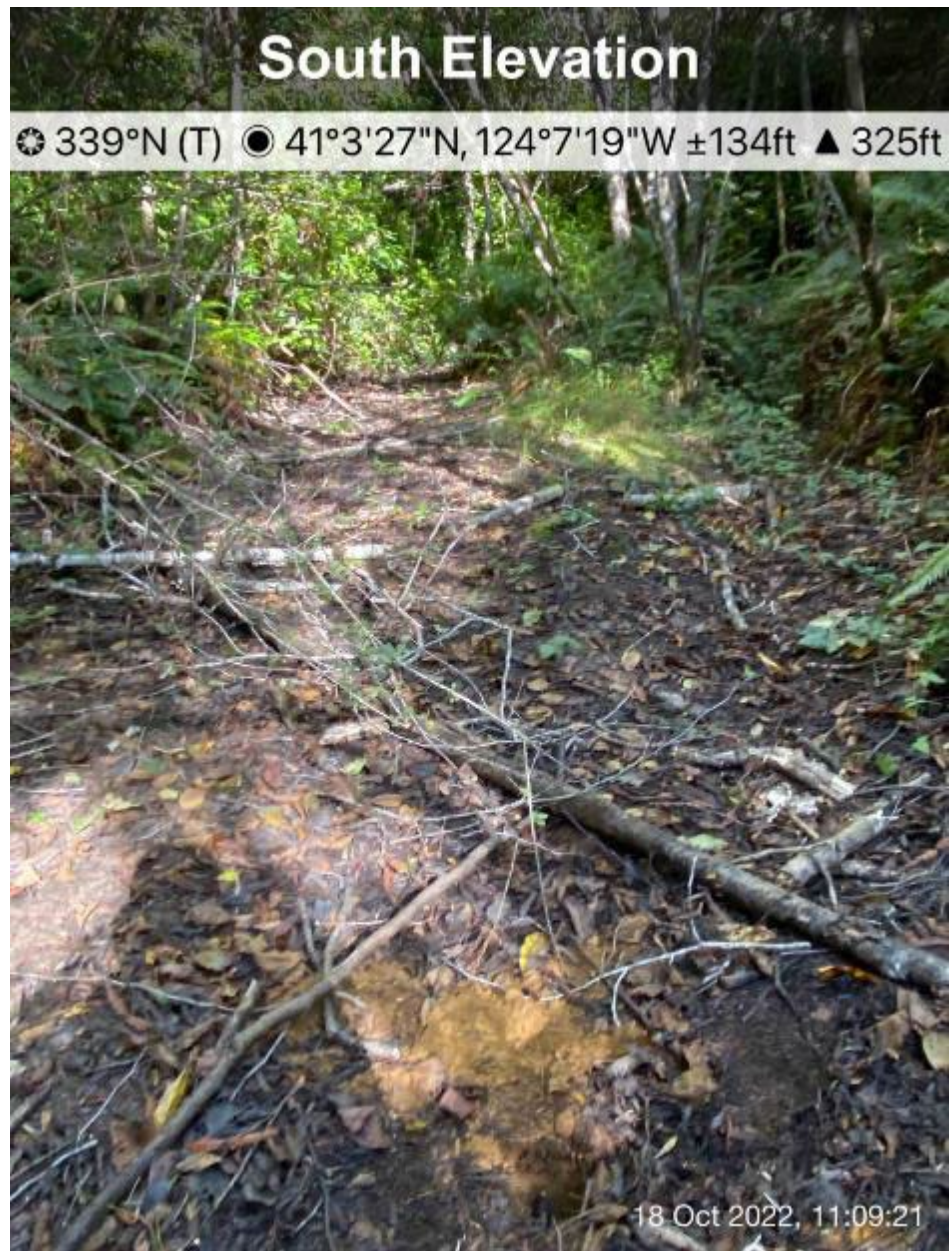
# **Appendix E**

## **Site Photographs**

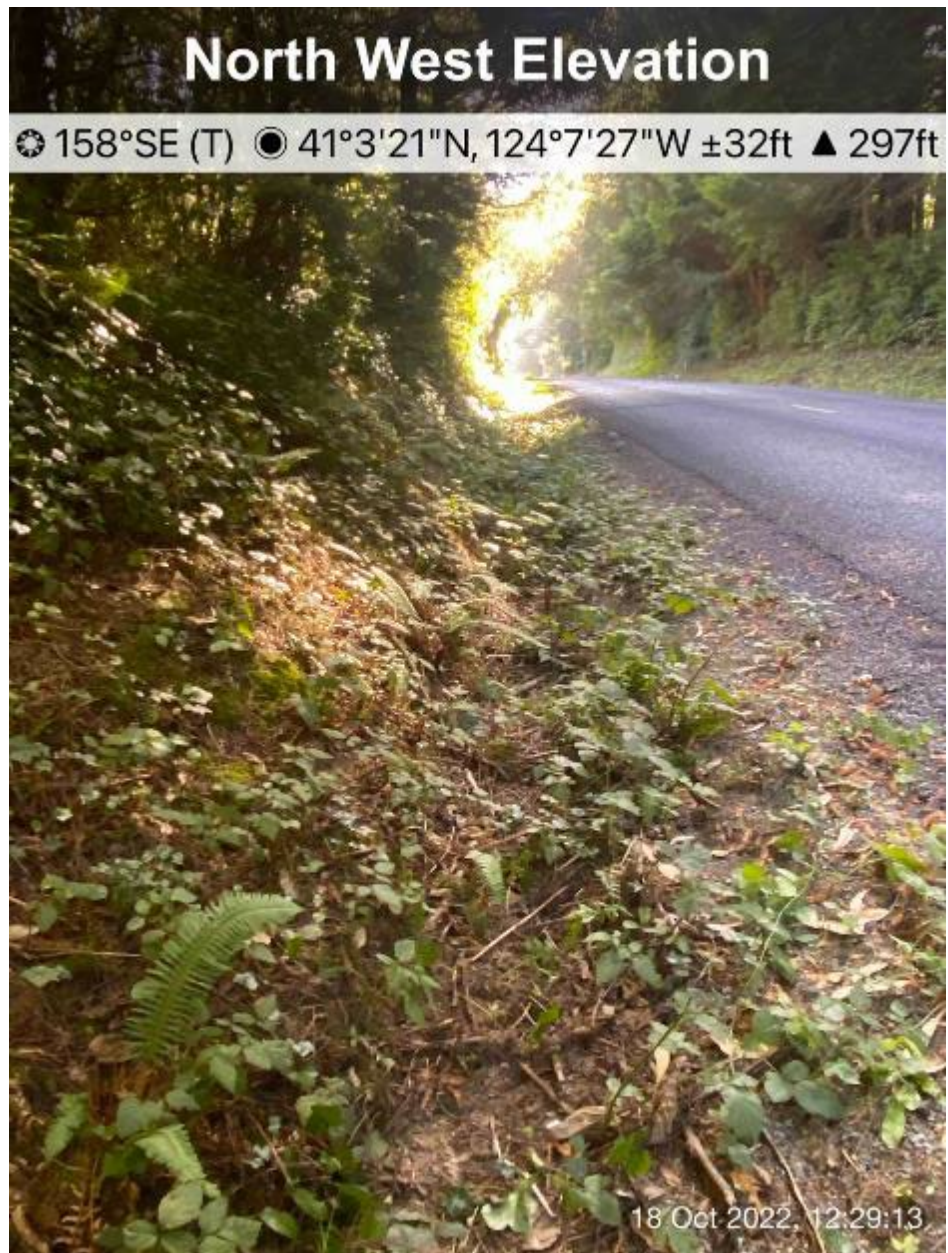


*Photo 1. Location of UP1 depression adjacent to the access road to the water tanks.*



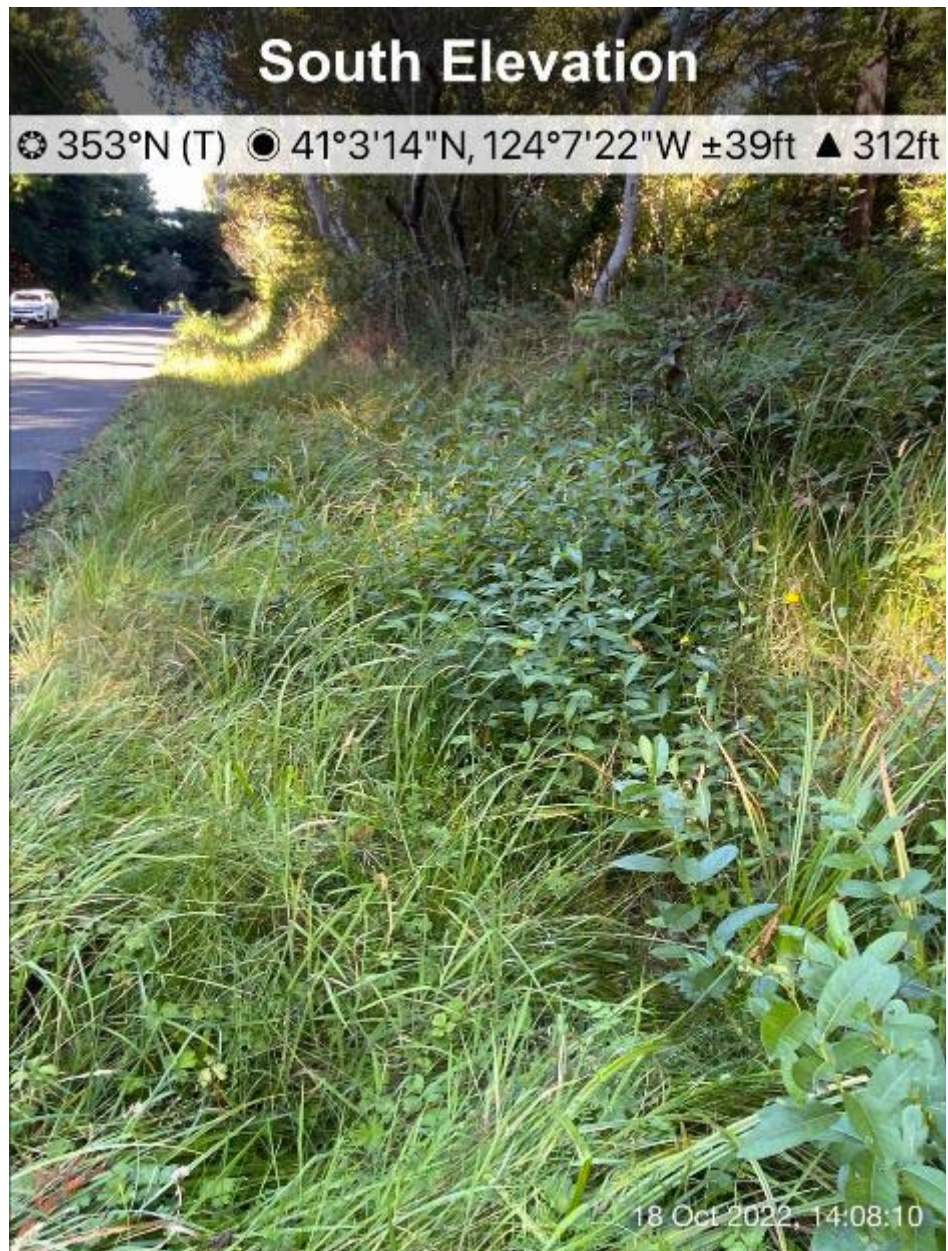


*Photo 2. Location of UP2 in the old railroad grade east of the water tanks.*



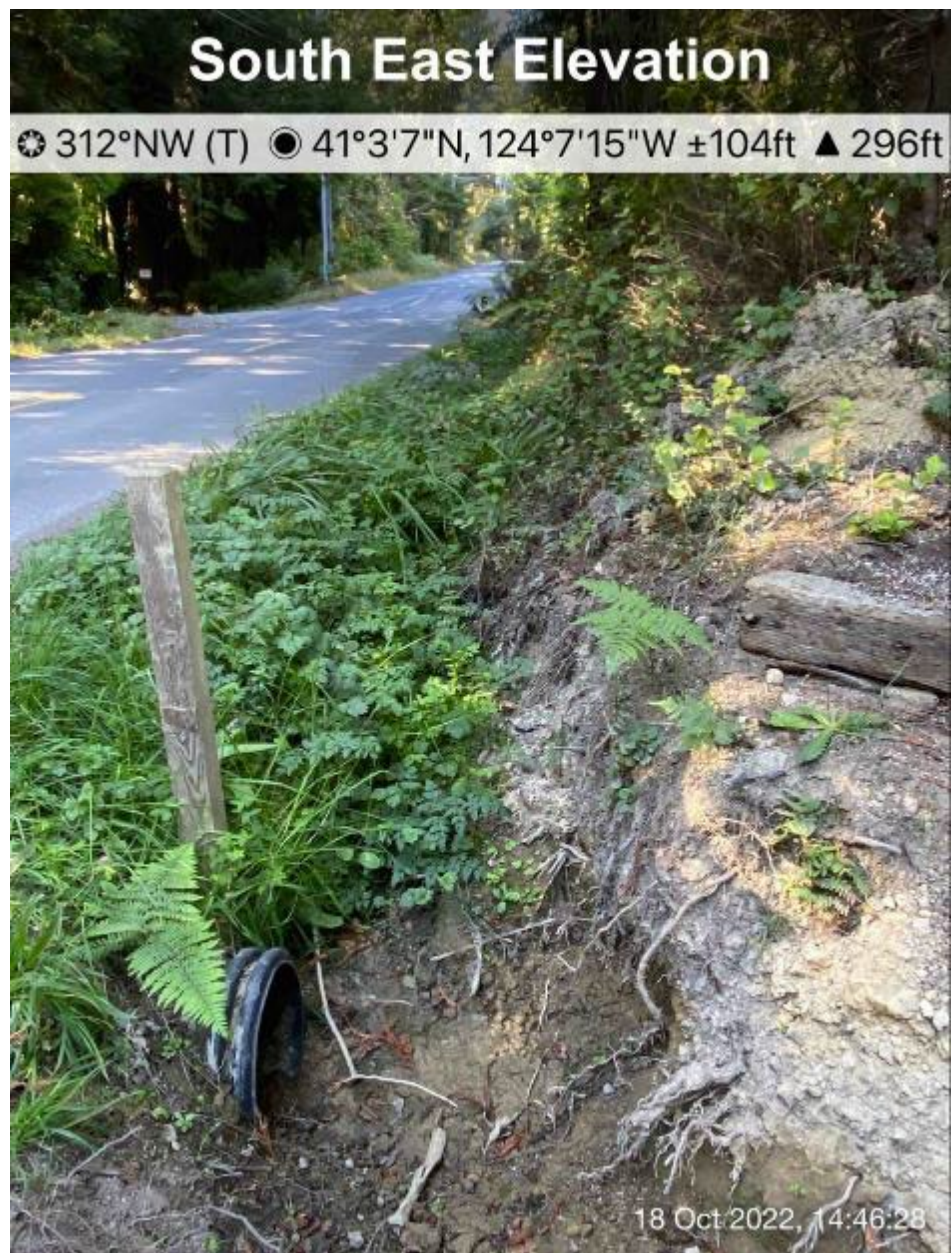
*Photo 3. Location of UP3 which is a ditch that is hydrologically connected to Wetland 1, a 1-parameter wetland.*





*Photo 4. Hydrophytic vegetation in Wetland 2, a 1-parameter wetland.*



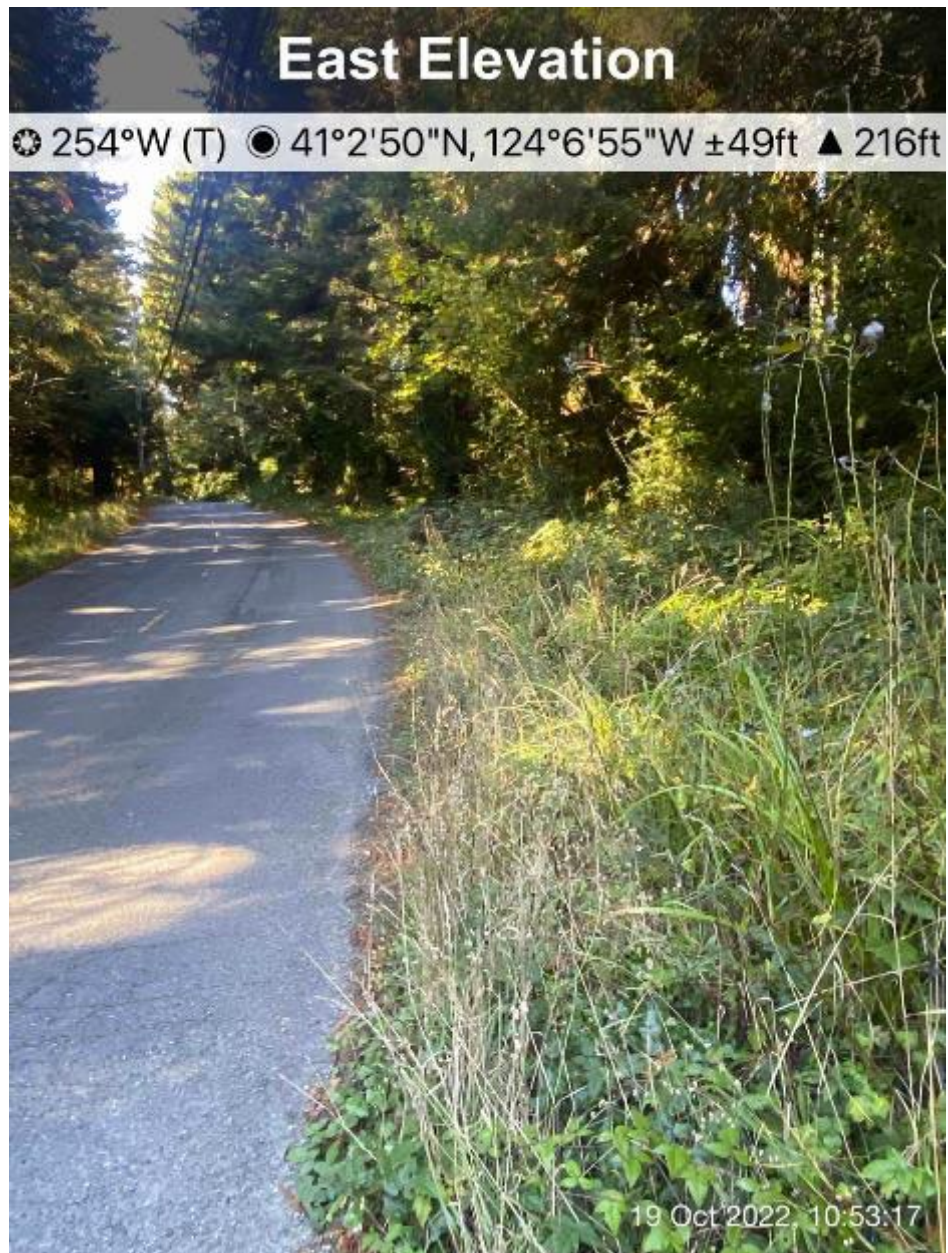


*Photo 5. Wetland 3 (3-parameter wetland) ditch and culvert that crosses underneath Westhaven Drive.*



*Photo 6. Northern end of Wetland 3 ditch.*





*Photo 7. Wetland 5 ditch (1-parameter wetland).*



## West Elevation

☉ 103°E (T) ● 41.051354°, -124.119668° ±13ft ▲ 278ft



03 Nov 2022, 10:18:47

*Photo 8. Riparian area of Deadman's Creek, east of the PSB.*





*Photo 9. Red alder (*Alnus rubrus*) SNC on left and Salal – berry brambles SNC (*Rubus ursinus* association) on right at Van Wycke Street.*



**Photo 10. Salal – berry brambles SNC (*Rubus ursinus* association) uphill of the temporary above ground water line at Van Wycke Street.**

# **Appendix F**

## **NRCS Custom Soil Resource Report**





United States  
Department of  
Agriculture

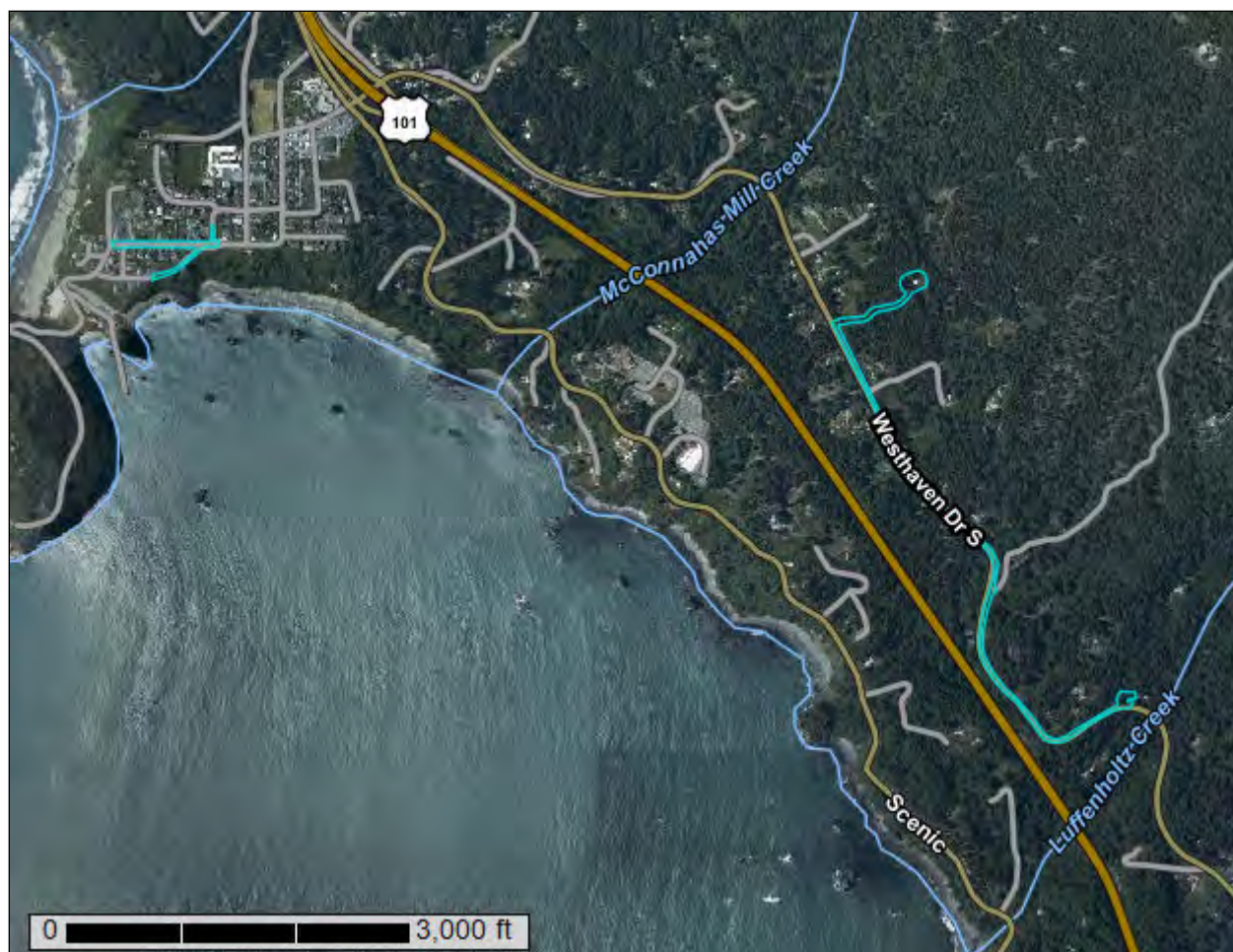
**NRCS**

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 and Del Norte Area, California

**12591317 - City of Trinidad Water  
Tank and Pipeline Replacement  
Project**



# 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](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

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<b>Preface</b> .....	2
<b>How Soil Surveys Are Made</b> .....	5
<b>Soil Map</b> .....	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Humboldt and Del Norte Area, California.....	13
146—Halfbluff-Tepona-Urban Land, 2 to 9 percent slopes.....	13
223—Megwil and Cannonball soils, 0 to 5 percent slopes.....	15
258—Lepoil-Espa-Candymountain complex, 15 to 50 percent slopes.....	17
299—Candymountain, 30 to 75 percent slopes.....	20
532—Atwell-Ladybird complex, 30 to 50 percent slopes.....	22
<b>References</b> .....	26

# 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

## Custom Soil Resource Report

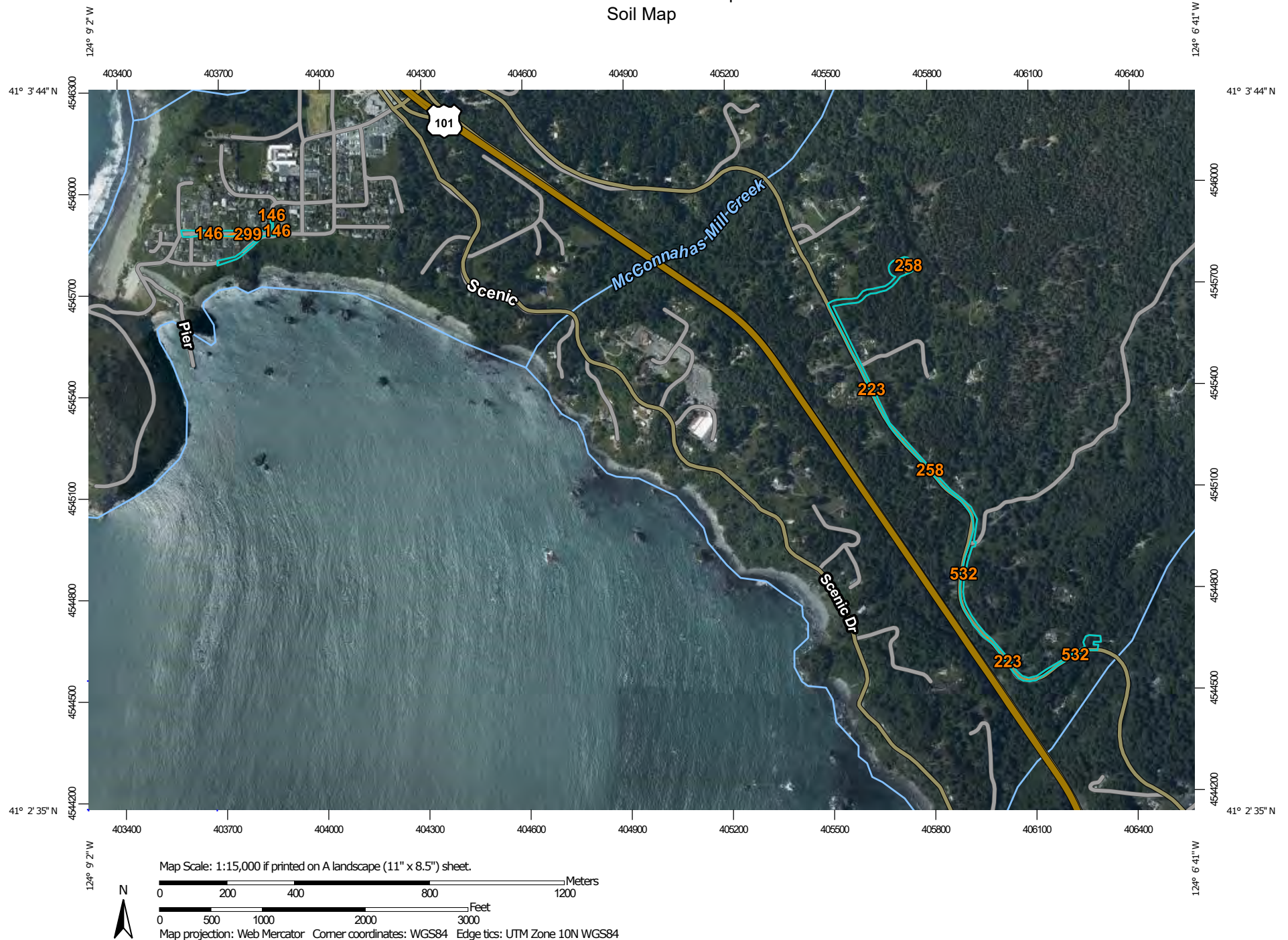
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# 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



# Custom Soil Resource Report


## 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 and Del Norte Area, California

Survey Area Data: Version 17, Sep 2, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 2, 2019—Jun 21, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
146	Halfbluff-Tepona-Urban Land, 2 to 9 percent slopes	0.8	10.4%
223	Megwil and Cannonball soils, 0 to 5 percent slopes	2.8	38.5%
258	Lepoil-Espa-Candymountain complex, 15 to 50 percent slopes	0.7	9.8%
299	Candymountain, 30 to 75 percent slopes	0.9	12.3%
532	Atwell-Ladybird complex, 30 to 50 percent slopes	2.1	29.0%
<b>Totals for Area of Interest</b>		<b>7.3</b>	<b>100.0%</b>

## 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 and Del Norte Area, California

### 146—Halfbluff-Tepona-Urban Land, 2 to 9 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2dh7x  
*Elevation:* 10 to 120 feet  
*Mean annual precipitation:* 35 to 90 inches  
*Mean annual air temperature:* 50 to 54 degrees F  
*Frost-free period:* 275 to 325 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Tepona and similar soils:* 40 percent  
*Halfbluff and similar soils:* 35 percent  
*Urban land, residential:* 15 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Tepona

##### Setting

*Landform:* Marine terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Marine deposits derived from sedimentary rock

##### Typical profile

*Oi - 0 to 0 inches:* slightly decomposed plant material  
*A - 0 to 11 inches:* sandy loam  
*Bw - 11 to 35 inches:* fine sandy loam  
*Bw - 35 to 41 inches:* fine sandy loam  
*C - 41 to 64 inches:* loamy fine sand

##### Properties and qualities

*Slope:* 2 to 9 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* About 30 to 39 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:* Moderate (about 8.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C  
*Ecological site:* F004BX118CA - Sitka spruce-redwood/salal/western brackenfern, marine terraces, marine deposits, fine sandy loam  
*Other vegetative classification:* Forest Type IV, coastal (RNPF004CA)

## Custom Soil Resource Report

*Hydric soil rating:* No

### Description of Halfbluff

#### Setting

*Landform:* Marine terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Marine deposits derived from sedimentary rock

#### Typical profile

*A - 0 to 23 inches:* loam

*Bw - 23 to 37 inches:* fine sandy loam

*C - 37 to 71 inches:* fine sand

#### Properties and qualities

*Slope:* 2 to 9 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* About 20 to 39 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:* Moderate (about 8.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2e

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B/D

*Ecological site:* F004BX118CA - Sitka spruce-redwood/salal/western brackenfern,  
marine terraces, marine deposits, fine sandy loam

*Other vegetative classification:* Forest Type IV, coastal (RNPF004CA)

*Hydric soil rating:* No

### Description of Urban Land, Residential

#### Setting

*Landform:* Alluvial fans

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Convex

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

*Hydric soil rating:* No

### Minor Components

#### Talawa

*Percent of map unit:* 5 percent

*Landform:* Marine terraces

*Landform position (two-dimensional):* Backslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### **Tillas**

*Percent of map unit:* 3 percent  
*Landform:* Alluvial fans  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Hookton**

*Percent of map unit:* 2 percent  
*Landform:* Erosion remnants  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## **223—Megwil and Cannonball soils, 0 to 5 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2p9z9  
*Elevation:* 10 to 600 feet  
*Mean annual precipitation:* 35 to 90 inches  
*Mean annual air temperature:* 52 to 55 degrees F  
*Frost-free period:* 275 to 325 days  
*Farmland classification:* Prime farmland if irrigated

### **Map Unit Composition**

*Megwil, , and similar soils:* 50 percent  
*Cannonball and similar soils:* 35 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Megwil,**

#### **Setting**

*Landform:* Marine terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed marine deposits



## Custom Soil Resource Report

### Typical profile

*Ap - 0 to 12 inches:* loam  
*Bt1 - 12 to 20 inches:* clay loam  
*Bt2 - 20 to 64 inches:* sandy clay loam

### Properties and qualities

*Slope:* 0 to 5 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*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 20 to 39 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:* High (about 10.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* 2e  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F004BX120CA - Redwood-Sitka spruce/California huckleberry-salmonberry/western swordfern-deer fern, marine terraces, loam  
*Hydric soil rating:* No

## Description of Cannonball

### Setting

*Landform:* Marine terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed marine deposits

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 11 inches:* loam  
*Bt1 - 11 to 18 inches:* loam  
*Bt2 - 18 to 31 inches:* sandy clay loam  
*Bt3 - 31 to 40 inches:* sandy clay loam  
*Btg - 40 to 68 inches:* sandy clay loam

### Properties and qualities

*Slope:* 0 to 5 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*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 20 to 39 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:* Moderate (about 8.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

## Custom Soil Resource Report

*Land capability classification (nonirrigated): 2e*

*Hydrologic Soil Group: C*

*Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California*

*huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam*

*Hydric soil rating: No*

### Minor Components

#### Urban land, residential

*Percent of map unit: 5 percent*

*Landform: Marine terraces*

*Landform position (two-dimensional): Summit*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Hydric soil rating: No*

#### Tsunami

*Percent of map unit: 5 percent*

*Landform: Fan remnants, fan terraces*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Hydric soil rating: No*

#### Talawa

*Percent of map unit: 3 percent*

*Landform: Marine terraces*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Concave*

*Across-slope shape: Concave*

*Hydric soil rating: Yes*

#### Aubell

*Percent of map unit: 2 percent*

*Landform: Fan remnants*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Hydric soil rating: No*

## 258—Lepoil-Espa-Candymountain complex, 15 to 50 percent slopes

### Map Unit Setting

*National map unit symbol: 2p9zd*

*Elevation: 10 to 600 feet*

## Custom Soil Resource Report

*Mean annual precipitation:* 35 to 90 inches  
*Mean annual air temperature:* 50 to 54 degrees F  
*Frost-free period:* 275 to 325 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Lepoil and similar soils:* 35 percent  
*Espa and similar soils:* 30 percent  
*Candymountain and similar soils:* 25 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Lepoil

#### Setting

*Landform:* Marine terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed marine deposits derived from sedimentary rock

#### Typical profile

*A - 0 to 8 inches:* loam  
*AB - 8 to 19 inches:* loam  
*Bt1 - 19 to 35 inches:* loam  
*Bt2 - 35 to 67 inches:* clay loam

#### Properties and qualities

*Slope:* 15 to 50 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*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 49 to 59 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:* High (about 11.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* C  
*Ecological site:* F004BX121CA - Redwood-Sitka spruce/salal-California  
huckleberry/western swordfern, marine terraces, marine deposits, sandy loam  
and loam  
*Hydric soil rating:* No

### Description of Espa

#### Setting

*Landform:* Marine terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear

## Custom Soil Resource Report

*Parent material:* Mixed marine deposits derived from sedimentary rock

### Typical profile

*A - 0 to 16 inches:* loam  
*BA - 16 to 22 inches:* loam  
*Bt - 22 to 41 inches:* loam  
*BC - 41 to 60 inches:* fine sandy loam

### Properties and qualities

*Slope:* 15 to 50 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*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 39 to 49 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:* High (about 10.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* B  
*Ecological site:* F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam  
*Hydric soil rating:* No

## Description of Candymountain

### Setting

*Landform:* Marine terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed marine deposits derived from sedimentary rock

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 11 inches:* fine sandy loam  
*Bw - 11 to 54 inches:* fine sandy loam  
*C - 54 to 68 inches:* fine sand

### Properties and qualities

*Slope:* 15 to 50 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 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:* High (about 9.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* B

*Ecological site:* F004BX121CA - Redwood-Sitka spruce/salal-California  
huckleberry/western swordfern, marine terraces, marine deposits, sandy loam  
and loam

*Hydric soil rating:* No

**Minor Components**

**Cannonball**

*Percent of map unit:* 5 percent

*Landform:* Marine terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* F004BX121CA - Redwood-Sitka spruce/salal-California  
huckleberry/western swordfern, marine terraces, marine deposits, sandy loam  
and loam

*Hydric soil rating:* No

**Hutsinpillar**

*Percent of map unit:* 5 percent

*Landform:* Drainageways, marine terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear, concave

*Across-slope shape:* Linear, concave

*Hydric soil rating:* Yes

**299—Candymountain, 30 to 75 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 2lcyt

*Elevation:* 10 to 600 feet

*Mean annual precipitation:* 35 to 90 inches

*Mean annual air temperature:* 50 to 55 degrees F

*Frost-free period:* 275 to 325 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Candymountain and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*



## Description of Candymountain

### Setting

*Landform:* Bluffs, marine terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Marine deposits derived from mixed

### Typical profile

*A - 0 to 24 inches:* fine sandy loam  
*Bw - 24 to 37 inches:* fine sandy loam  
*C - 37 to 64 inches:* loamy fine sand

### Properties and qualities

*Slope:* 30 to 75 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 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:* Moderate (about 8.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* B  
*Ecological site:* F004B1101CA - Low elevation marine and floodplain terraces  
*Hydric soil rating:* No

## Minor Components

### Ladybird

*Percent of map unit:* 5 percent  
*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Ecological site:* F004BX110CA - Sitka spruce-red alder/salmonberry/western swordfern, hills, sandstone and mudstone, clay loam  
*Other vegetative classification:* Forest Type IV, coastal (RNPF004CA)  
*Hydric soil rating:* No

### Footstep

*Percent of map unit:* 3 percent  
*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Mountainflank  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex

## Custom Soil Resource Report

*Ecological site:* F004BX108CA - Redwood, western swordfern, mountain slopes, sandstone and schist, clay loam

*Other vegetative classification:* Forest Type IV, coastal (RNPF004CA)

*Hydric soil rating:* No

### **Houda**

*Percent of map unit:* 3 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Ecological site:* F004BX110CA - Sitka spruce-red alder/salmonberry/western swordfern, hills, sandstone and mudstone, clay loam

*Hydric soil rating:* No

### **Cannonball**

*Percent of map unit:* 2 percent

*Landform:* Marine terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam

*Hydric soil rating:* No

### **Hutsinpillar**

*Percent of map unit:* 2 percent

*Landform:* Drainageways, marine terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear, concave

*Across-slope shape:* Linear, concave

*Hydric soil rating:* Yes

## **532—Atwell-Ladybird complex, 30 to 50 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2H6m

*Elevation:* 60 to 1,920 feet

*Mean annual precipitation:* 70 to 90 inches

*Mean annual air temperature:* 50 to 55 degrees F

*Frost-free period:* 250 to 290 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Atwell and similar soils:* 75 percent

*Ladybird and similar soils:* 15 percent

## Custom Soil Resource Report

*Minor components: 10 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Atwell

#### Setting

*Landform:* Mountain slopes, earthflows

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountainflank

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Earthflow deposits derived from sheared sandstone and mudstone

#### Typical profile

*Oi - 0 to 2 inches:* slightly decomposed plant material

*A - 2 to 7 inches:* silt loam

*AB - 7 to 11 inches:* clay loam

*BAt - 11 to 23 inches:* clay loam

*Bt - 23 to 32 inches:* gravelly clay loam

*2Cg - 32 to 81 inches:* clay

#### Properties and qualities

*Slope:* 30 to 50 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 28 to 39 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:* High (about 9.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* C

*Ecological site:* F004BX108CA - Redwood, western swordfern, mountain slopes, sandstone and schist, clay loam

*Other vegetative classification:* Forest Type IV, inland (RNPF004ICA)

*Hydric soil rating:* No

### Description of Ladybird

#### Setting

*Landform:* Mountain slopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountainflank

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Earthflow deposits derived from sandstone and mudstone

#### Typical profile

*Oi - 0 to 2 inches:* slightly decomposed plant material

*A - 2 to 6 inches:* gravelly loam

## Custom Soil Resource Report

*AB - 6 to 22 inches:* gravelly clay loam  
*Bt - 22 to 47 inches:* gravelly clay loam  
*Cg - 47 to 71 inches:* very gravelly clay loam

### Properties and qualities

*Slope:* 30 to 50 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)  
*Depth to water table:* About 47 to 59 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:* Moderate (about 6.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* C  
*Ecological site:* F004BX108CA - Redwood, western swordfern, mountain slopes, sandstone and schist, clay loam  
*Other vegetative classification:* Forest Type IV, inland (RNPF004ICA)  
*Hydric soil rating:* No

### Minor Components

#### Lackscreek

*Percent of map unit:* 5 percent  
*Landform:* Ridges, mountain slopes  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Mountaintop, mountainflank  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* F004BX103CA - Redwood-Douglas-fir/Pacific rhododendron, mountain slopes, sandstone, clay loam  
*Other vegetative classification:* Forest Type III (RNPF003CA)  
*Hydric soil rating:* No

#### Slidecreek

*Percent of map unit:* 3 percent  
*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Ecological site:* F004BX103CA - Redwood-Douglas-fir/Pacific rhododendron, mountain slopes, sandstone, clay loam  
*Hydric soil rating:* No

#### Rock outcrop

*Percent of map unit:* 2 percent  
*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank  
*Down-slope shape:* Convex

## Custom Soil Resource Report

*Across-slope shape:* Convex

*Other vegetative classification:* Oak Woodland (RNPOW001CA)

*Hydric soil rating:* No



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