Redway Wastewater Infrastructure Improvement Project

Public Circulation Draft IS/MND

Redway Community Services District

November 29, 2022

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Redway Community Services District

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1. Project Information

Project Title	Redway Wastewater Infrastructure Improvement Project
Lead Agency Name & Address	Redway Community Services District P.O. Box 40, Redway CA, 95560
Contact Person & Phone Number	Cody Cox, General Manager, (707) 923-3101
Project Location	Redway, CA
General Plan Land Use Designation	Public Facility (PF), Timberland (T), Industrial General (IG), Residential Low Density (RL)
Zoning	Agriculture Exclusive (AE), Timberland Production (TPZ), Limited Industrial with combining zone Q (ML-Q), Residential One-family with combining zones B-3-Q (R-1-B-3-Q), Highway Service Commercial (CH), Residential One-family with combining zone T (R-1-T), Industrial Commercial with combining zone D (C-3-D).

1.1 CEQA Requirements

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

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

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

1.2 Project Background

The Redway Community Services District (RCSD) has secured grant funding for the planning and design of improvements to the wastewater treatment and collection system infrastructure, which is more than 50 years old. Years of active service have resulted in system wear despite ongoing maintenance. Many

components of the system are at the end of their useful lives and are at risk of failure. The overall system has also become labor intensive to operate and maintain, and there is limited ability to automate controls and alarms. These characteristics are common to older, smaller service districts, which can benefit from targeted engineering evaluation and upgrades to meet system needs and operate more effectively in the future.

The purpose of the Project is to rehabilitate and replace aging infrastructure at the WWTF to provide better reliability and increase wastewater treatment capacity to provide sufficient treatment capacity during wet weather events. The Project is also improving lift station operations by installing equipment to support maintenance activities, replacing aging pumps and installing communications and monitoring equipment to provide automation and remote monitoring.

1.3 Project Service Area and Existing Setting

The RCSD is located in southern Humboldt County, California, roughly 200 miles north of San Francisco and 66 miles south of Eureka. The Project Area is approximately 9.38 acres and is located directly adjacent to the South Fork Eel River (SF Eel River). A map of the Project Area is shown in **Appendix A, Figure 1** which depicts the service area, and collection system. RCSD maintains and operates a sanitary sewer collection system and a wastewater treatment facility (WWTF). See **Appendix A, Figure 2** for components of the collection system and the location of the WWTF.

The RCSD is bordered by the SF Eel River to the south, west and north. To the east, the community of Redway is bordered by dense forest and mountains. Redway consists primarily of rural residential neighborhoods, with a small commercial district along the main traffic corridor of Redwood Drive, and another east of Evergreen Road. Redway is nearly built out at capacity, with limited urban expansion areas planned for the future (Humboldt County 2021).

The 2020 population for the community of Redway was estimated to be 1,247 people (US Census 2020). The population of Redway is expected to grow to approximately 2,615 people by 2050, if the area continues at 2.34% annual growth. This population projection is likely an overestimate given that Redway is mostly built out and no major employers exist within the area to drive population growth.

2. Project Description

The Project includes improvements to the wastewater collection and treatment systems, particularly including the electronic communication and technology improvements at the lift stations, infrastructure improvements at the WWTF, and replacement of the effluent pipeline between the WWTF and percolation ponds including the portion that crosses over Leggett Creek.

2.1 Existing System

Collection System. The RCSD operates an existing wastewater collection system and wastewater treatment facility. The wastewater collection system is comprised of roughly 10 miles of gravity main piping and three miles of force main piping, ranging in size from 6 inches to 10 inches in diameter. Additionally, RCSD maintains five lift stations which serve distinctive wastewater collection zones, or sewer sheds: Dogwood, Azalea, West Coast, Mill St. and Evergreen lift stations (see **Figures 2** and **Figures 3-1** through **3-5**). Two other lift stations pump directly to the WWTF, and adjacent YMCA campground and Eel River Conservation Camp, however these other lift stations are privately owned and operated and were not evaluated as part of this Project.

Wastewater Treatment Facility. The treatment process is divided between liquids and solids treatment. For liquids treatment, RCSD utilizes an oxidation ditch with a surface aerator, a secondary clarifier, and chlorine disinfection via a contact basin, and dichlorination before treated effluent is pumped to the percolation ponds (described below). There is also a direct overflow to the Eel River (Discharge Point 1); the effluent is dechlorinated with sulfur dioxide in the event of a direct overflow to the river. No modifications to infrastructure or schedule of use are proposed for Discharge Point 1 under the Project. Solids treatment includes an aerobic digester, sludge drying beds and a filtrate well to pump return liquid through the drying beds.

Wastewater Treatment Facility Effluent. RCSD currently has two approved discharges points: SF Eel River (Discharge Point 1) and the upland percolation ponds (Discharge Point 2). An approximate 1,600-foot, 4-inch diameter effluent pipeline conveys effluent to the two percolation ponds located approximately 1,600 feet northeast of the WWTF. The effluent pipe is located underground between the WWTF and the percolation ponds with the exception of the crossing over Leggett Creek, which is a perennial tributary that flows into the SF Eel River. Leggett Creek is located within a deep canyon. The effluent pipe surfaces on the south and north sides of the Leggett Creek canyon, and is visible (i.e., spans the canyon within a rustic bridge structure) for approximately 300 feet, and approximately 50 feet above Leggett Creek.

2.2 Proposed Project Components

Improvements are proposed to the following components of the RCSD lift stations, WWTF and effluent pipe location (see **Appendix A, Figures 3-1** through **3-5** for the latest Project designs, and **Table 2.2-1** for depth ranges of excavation).

Wastewater Collection System and Lift Stations

Various wastewater collection system improvements are proposed, which would occur at the five lift stations. The improvements include:

- **Improved Flow Monitoring.** Installation of flow monitoring, level sensing and remote adjustment equipment, telemetry upgrades, and supervisory control and data acquisition (SCADA) technology integration. These improvements would be completed at the Azalea, Dogwood, Evergreen, Mill St. and West Coast lift stations.
- **Maintenance Improvements.** Installation of new pump stationary mounts at Azalea, Evergreen, Mill St. and West Coast lift stations. The pump stationary mounts would enable RCSD to utilize a portable Davit crane (or similar) to lift pumps out of each of the wet wells, providing easier access during operations and maintenance activities.
- **Pump Replacement & Improvements.** Installation of quick disconnect capability and rails to the existing wet well to enable safer/more efficient maintenance of the pumps and replacement of existing pumps at West Coast lift station with new submersible pumps.

Wastewater Treatment and Disposal System Infrastructure

Various improvements are proposed at the WWTF to provided capacity for peak wet weather inflows and provide sufficient treatment to meet effluent quality requirements. See **Figure 3-5** for the locations of the proposed improvements, which include:

- **Headworks upgrade.** Demolition of existing headworks and installation of a new packaged headworks inlet system to provide screening and grit removal.
- **Secondary process upgrades.** Replacement of the existing brush aerator and installation of a redundant temporary aerator to be used in the instance that the primary brush aerator fails.
- **Clarifier 1 retrofit.** Convert the existing aerobic digester (formerly called Clarifier 1) back to a clarifier by installation of a clarifier influent well, rake, scum box, scum skimmer, weir plates and RAS pumps.
- **Clarifier 2 rehabilitation.** Replacement of the clarifier influent well, rake, scum box, scum skimmer, weir plates and upgraded RAS pumps for Clarifier 2.
- **Clarifier distribution box.** Install a new clarifier distribution box to distribute flows proportionally to Clarifiers 1 and 2.
- **Chlorine contact basin and effluent upgrades.** Expansion of the existing chlorine contact basin with a pump to improve effluent handling. Replacement of the existing effluent pumps with larger pumps.
- **Sludge drying upgrades.** Installation of new greenhouse structures above the existing sludge drying beds to streamline drying by providing better cover during wet weather events.
- **General improvements.** Installation of interconnecting pipework between the proposed infrastructure at the WWTF, as mentioned above. Rehabilitation or upgrade of electrical systems associated with the various upgrades, including a potential replacement transformer. SCADA improvements are proposed at the WWTF and lift stations, and integration into the existing SCADA system.

WWTF Effluent Pipeline

The existing 4-inch effluent pipeline that transports treated effluent from the WWTF to the percolation ponds (Discharge Point 2) would be replaced with an 8-inch pipeline. Initially, the proposed pipeline would be constructed adjacent to the existing pipeline to enable continued service of the WWTF, however, following activation of the proposed effluent pipeline, the existing pipeline would be deactivated and removed (the subsurface portion of the effluent pipe may be abandoned in place). Additional upgrades or rehabilitation of the effluent pipeline structure/bridge across the Leggett Creek canyon, including but not limited to stabilization of the northern and southern pipe daylighting points to secure the integrity of the cliffside, modifications of the slope of the pipeline, and structural improvements would occur as needed.

Table 2.2-1 Excavation Range per Project Component

Project Component	Range of Excavation Depth
Lift station upgrades	Up to 2 feet
Headworks upgrade	Existing wastewater structure to be demolished and new headworks to be built on top of new fill. Influent pipes may be excavated for connection up to 5 feet.
Secondary treatment upgrades	Up to 2 feet
Clarifier 1 retrofit	Up to 5 feet
Clarifier 2 rehabilitation	N/A
Chlorine contact basin and effluent pump station upgrade	Up to 12 feet
Sludge drying upgrades	Up to 2 feet
Pipe placement (“General Improvements”	Up to 5 feet
Effluent pipe replacement	3-6 feet

2.3 Construction Activities

Construction activities for this Project range from the installation of electrical equipment onto existing infrastructure (and thus no earth work), to excavation for new below ground structures.

Lift Stations

In general, the proposed improvements at the lift stations would be confined to within the footprint of each lift station and would not require disturbance outside of previously disturbed area (i.e., areas with concrete). Rather proposed construction activities at these locations would include the installation of electrical communications technology, minor excavation (less than two feet depth), and the removal of and replacement of infrastructure to occur at the surface level. Staging for construction at the lift stations would occur either within the lift station footprint(s) or in previously disturbed area(s) outside of the lift station footprint, such as a nearby parking lot or road shoulder.

Wastewater Treatment and Disposal Infrastructure

Construction for WWTF disposal system infrastructure would occur within the existing WWTF footprint, and would not occur outside of the areas shown on **Figures 3-1** through **3-5** in **Appendix A**. Construction activities would consist of demolition of existing facilities (headworks, aerobic digester, and oxidation ditch aerator), site grading, excavation for structural pads/foundations and new treatment facilities, installation of new pads, treatment facilities, water retaining structures, tanks, pipelines and pumps within the existing footprint of the WWTF. Excavation is not expected to exceed 12 feet below the surface and would be

limited to occur within the boundaries of the Project Area as shown in **Appendix A, Figures 3-1** through **3-5**.

WWTF Effluent pipeline

The effluent pipeline would be up to approximately 1,600 linear feet, 8-inches in diameter and would be constructed adjacent to the existing effluent pipeline alignment which occurs over Leggett Creek. Construction activities would necessitate the clearing of vegetation adjacent to where the effluent pipeline surfaces on the north and south sides of the Leggett Creek canyon and along the access road between the WWTF and the Leggett Creek canyon and percolation ponds, amounting to up to approximately 0.91 acres of woody vegetation to be potentially removed including Douglas-fir (*Pseudotsuga menziesii)*, tanoak (*Notholithocarpus densiflorus*), redwood (*Sequoia sempervirens*), and understory shrubs. This vegetation is located at the top of the Leggett Creek canyon, and no vegetation along the banks of Leggett Creek (i.e., riparian vegetation) is proposed for removal. All vegetation to be removed would be along the outskirts of the existing access road (which is already cleared of vegetation), and which is located at least approximately 225 feet from the SF Eel River and approximately 50 feet above Leggett Creek. This value should be considered a maximum impact, it is likely that far less acreage of vegetation would need to be removed to enable construction. Up to 1,600 feet of pipeline trench would be excavated (assuming an approximate ten-foot width and three-to-six-foot depth) between the WWTF and Leggett Creek canyon and between the Leggett Creek canyon and percolation ponds. Alternatively, some or all of the replacement effluent pipeline may be installed via horizontal directional drilling (HDD).

Under this scenario, high-density polyethylene (HDPE) pipe would be welded together and placed in a designated pipe lay-down area. Small entry and exit pits (approximately 2 feet deep, 2 feet wide, and 5 feet long) would be excavated. A drill rig would be set up, a pilot bore would be drilled, and the pilot hole would then be reamed out to size by completing multiple passes with a cutting head. After the hole is reamed, the HDPE pipe would be pulled through. After the collection system piping is installed and trenches are backfilled, paving would occur over the areas of paving that have been removed from excavation. A grinder would be used to grind out the section to be paved, and the spoils from this activity would be hauled offsite. A paver would be used to pave the trench section, and rollers would be used to compact the pavement that is placed.

As mentioned above, following successful installation of the new effluent pipe, the existing effluent pipe would be abandoned in place where it occurs subsurface and removed where it occurs above the surface such as across Leggett Creek.

Construction Equipment and Staging

A variety of construction equipment would be used to build the Project. This would include excavators, drill rigs, backhoes, front end loaders, crane, scrapers, graders, concrete saws, hammer excavator attachments, vibratory driver, winches, chainsaws, forklifts, rollers, asphalt road pavers, tractors, compactors, air compressors, chippers, hydromulcher, generator sets, and pneumatic tools. A variety of trucks including concrete mixers with the capacity to pour, haul trucks, dump trucks, and water trucks would also be required. Site preparation, including demolition, clearing and grading of the Project Area as necessary would require the removal and off-haul of materials. This would include, but not necessarily be limited to, vegetation, concrete, asphalt and fill, and existing utilities.

Staging would occur within the WWTF footprint, lift station footprints or within a previous disturbed off-site area, such as a parking lot or fallow grassy area.

Construction Schedule

Construction would likely occur within a single construction season, however, may require two construction seasons. Each construction season would last for approximately six to eight months. It's anticipated that Project construction would occur during the dry season in either 2024 and/or 2025. Construction activities would be limited to daytime work hours between 7:00 a.m. to 7:00 p.m., Monday through Friday with occasional work on Saturdays. If feasible, vegetation clearing would occur outside of the nesting bird season which is assumed to occur between March 15 to August 15, and thus vegetation removal would occur if feasible after August 15 and/or before March 15.

2.4 Operation and Maintenance

RCSD would maintain and operate the Project under normal, existing operations and schedule. Once construction is complete, general operation and maintenance activities associated with the proposed Project would include routine testing of equipment and the SCADA system, annual inspections, testing, repairs and servicing of equipment, and other similar operational requirements similar to what is occurring currently.

Operation and maintenance of the Project would not generate additional vehicle trips, above existing conditions. RCSD would be responsible for all maintenance. Project operation and maintenance would be consistent with existing maintenance procedures and schedule.

2.5 Compliance with Existing Regulations and Standard BMPS

The Project will abide by the following regulations and industry-accepted Best Management Practices (BMPs) to reduce or avoid potential adverse effects that could result from construction or operation of the project. In addition to these BMPs, mitigation measures are presented in the following analysis sections in Chapter 4, Environmental Analysis, to reduce potentially significant environmental impacts below a level of significance.

Implement Geotechnical Design Recommendations

The Project will be designed and constructed in compliance with the site-specific recommendations made in the forthcoming Geotechnical Design Report, which is anticipated to be completed by November 2023. This will include design in accordance with recommendations for open-cut trenching, trenchless construction, excavation shoring, pipeline foundation material, pipeline embedment material, trench backfill material, shaft construction, and other factors. The geotechnical recommendations will be incorporated into the final plans and specifications for the Project and will be implemented during construction.

Implement Air Quality Control Measures during Construction

To limit dust, criteria pollutants, and precursor emissions associated with the construction activity, the following Bay Area Air Quality Management District (BAAQMD) recommended Basic Construction Measures will be included in construction contract specifications and required during implementation of the Project (these measures are utilized regularly in North Coast Unified Air Quality Management District [NCUAQMD]-jurisdiction projects):

– All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas and unpaved access roads) shall be watered two times per day;
– All haul trucks transporting soil, sand, or other loose material off-site shall be covered or shall have at least two feet of freeboard;

- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited;
- All vehicle speeds on unpaved areas shall be limited to 15 miles per hour;
- All paving shall be completed as soon as possible after trenching work is finished;
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points;
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation;
- A publicly visible sign shall be posted with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Implement Required Stormwater Pollution Prevention Plan

The Project will seek coverage under State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities. The RCSD will submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the SWRCB. 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.

Compliance with Tree Ordinance

The Humboldt County General Plan contains the following policy regarding trees:

> *BR-P13. Landmark Trees*
>
> Establish a program to identify and protect landmark trees, including trees that exhibit notable characteristics in terms of their size, age, rarity, shape or location.

As of the date of this ISMND, no county program to identify and protect landmark trees exists.

2.6 Required Agency Approvals

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

- California Environmental Quality Act (CEQA) Initial Study/Mitigated Negative Declaration with the RCSD as the lead agency;
- Lake and Streambed Alteration Agreement from California Department of Fish and Wildlife for Project work occurring over Leggett Creek.

It should be noted that per California Government Code 53091, building and zoning ordinances of a county or city shall not apply to location or construction of facilities for the production, generation, storage,

treatment or transmission of water, wastewater or electrical energy by a local agency. Therefore the Project would not acquire a Grading Permit or Conditional Use Permit from Humboldt County.

2.7 Tribal Consultation

On August 26, 2022, GHD on behalf of the RCSD sent the Bear River Band of Rohnerville Rancheria (BRBRR), a tribal cultural resources consultation invitation in accordance with Assembly Bill 52 (AB52). An email exchange occurred between GHD and Bear River's Tribal Historic Preservation Officer (THPO), and a conclusionary response was received from Bear River on September 11, 2022. The BRBRR does not want to carry out consultation under AB52 because they determined that the Project is not likely to cause a substantial adverse change in the significance of a tribal cultural resource as defined under AB52.

Separate from the AB52 process, GHD's subconsulting cultural resources specialist Roscoe and Associates (on behalf of the RCSD) has exchanged phone calls and emails with BRBRR with regard to the Project. On August 3, 2022, Roscoe and Associates (on behalf of the RCSD) met with BRBRR at the Project site to discuss the Project's potential for impacting cultural resources (RA 2022). Subsequent to the meeting, it was recommended that a cultural monitor should be on site during excavations within certain portions of the Project Area. On September 23, 2022, the BRBRR Tribal Historic Preservation Officer McCavour responded via email in agreement with the recommendation (RA 2022)

In addition, on August 4, 2022 Roscoe and Associates requested a review of the Native American Heritage Commission (NAHC) Sacred Lands File for information on Native American cultural resources in the Project Area. The NAHC staff responded by email on October 3, 2022, stating that the Sacred Lands File search was negative, and provided a list of Tribal representatives and individuals to be contacted regarding the Project. After receiving the NAHC response, RA sent letters on October 10, 2022, containing the project description and maps to representatives of the Big Lagoon Rancheria, the Karuk Tribe, the Round Valley Reservation/ Covelo Indian Community, and the Yurok Tribe. No responses have been received to date from these groups. The BRBRR would like to receive a copy of the cultural resource report and that they would be consulting further with the lead agency. No other responses indicated they knew of historic resources in the Project Area. The final Cultural Resources Investigation Report was sent to the BRBRR on November 23, 2022.

For a summary of the investigation and mitigation measures related to cultural and tribal cultural resources, see Sections 4.5 Cultural Resources and 4.17 Tribal Resources.

3. Environmental Factors Potentially Affected

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

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

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

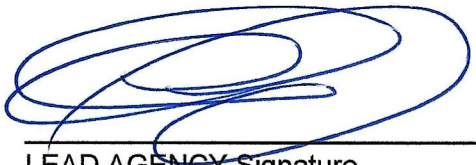
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.

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

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

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

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



LEAD AGENCY Signature

12/8/22

Date

4. Environmental Analysis

4.1 Aesthetics

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

The RCSD is bordered by the SF Eel River, a designated wild and scenic river, to the south, west and north. To the east, the community of Redway is bordered by dense forest and coastal mountains. The community of Redway itself is developed and nearly built out at capacity.

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

A scenic vista can be defined as a view that has remarkable scenery or a broad or outstanding view of the natural landscape. The Humboldt County General Plan identifies forests, open space and agricultural lands, scenic roads, and wild and scenic rivers as scenic resources within the County. Designated as a wild and scenic river by California in 1972 and Federally in 1981, the SF Eel River, from its confluence with the main stem to the southern boundary of the Yolla Bolly Wilderness Area. Therefore, due to the wild and scenic river designation, the Project Area is located near a scenic resource as defined by the Humboldt County General Plan.

Through the Project Area, the RCSD owns and operates the WWTF and lift stations, and the Project would improve wastewater collection and treatment systems within the community of Redway. Construction activities for this Project range from the installation of electrical equipment onto existing infrastructure (and

thus no earth work), to excavation for new below ground structures. In general, the proposed improvements at the lift stations would be confined to within the footprint of each lift station, would require some excavation however no ground disturbance would occur outside of previously disturbed area. It is anticipated that up to approximately 0.91 acres of woody vegetation may be removed along the access road and at effluent pipe daylight points, to enable installation of the proposed effluent pipeline (see Section 4.4 – Biological Resources for more detailed information on vegetation removal and replanting).

Although construction equipment would be onsite and operation during construction of the Project, this would be for a relatively short duration. Additionally, the WWTF is not currently open to the public and therefore views of the facility or from the facility are not typically viewed by the public. The visual character of the area, including the scenic resources provided by the SF Eel River, would not be permanently altered, as the Project does not include any new elements that would block or screen public views and does not substantially alter the existing footprint. Operation of the Project would be consistent with current operation and maintenance schedule. Therefore, during construction and operation of the Project no impact would occur.

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

According to the California Scenic Highway Mapping System, there are no designated, State, or Federal, scenic highways, or byways, in the Project vicinity. US 101 is eligible for designation and is located approximately 1.25 miles east of the Project Area but, due to topography and tall vegetation, is not visible from the Project. Due to the absence of a designated state scenic highway in or immediately adjacent to the Project, or views of the Project Area from an eligible state scenic highway, no impact would occur.

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

The Project Area includes an active WWTF and lift stations. The proposed improvements at the lift stations would be confined to within the footprint of each lift station and would not require disturbance outside of the previously disturbed areas. These lift stations are fenced and not accessible to the public, thus visibility of the stations is limited. The WWTF access road begins at the publicly accessible Whittemore Grove section of the John B. Dewitt Redwoods State Natural Reserve, however the WWTF access road is gated and not publicly accessible. Therefore, the WWTF (including the effluent pipe) are not visible from the Reserve. Proposed Project elements include replacement of existing infrastructure and would not conflict with zoning and other regulations governing scenic quality within Humboldt County. As mentioned above in 4.1-a, up to approximately 0.91 acres of woody vegetation may be removed during construction. Overall, the Project does not include any tall visual elements that would block or screen public views. No impact would result.

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

Existing street, pedestrian, and WWTF lights currently exist in the Project Area. The Project does not propose to add or remove permanent or temporary sources of light. The replacement effluent pipe would be

underground, except where it crosses above Leggett Creek, and therefore would not produce any new sources of glare. Other Project elements that are above the surface such as headworks upgrade, new digester, or new covers for sludge drying basins which would not include material that would produce a substantial amount of glare. Additionally, the WWTF and lift stations are not publicly visible and any potential increase in glare would not be visible to the public. No impact would result.

4.2 Agriculture and Forest Resources

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

The Project Area is predominantly located in developed portions of the community of Redway (i.e. the lift stations), and lesser so within undeveloped portions of the outskirts of Redway (i.e. the WWTF). There are no lands managed for agriculture or timber production within the Project Area, however the WWTF is zoned Agricultural Exclusive, and the forested area between the WWTF and percolation ponds (which includes Leggett Creek) is zoned Timberland Production Zone (TPZ). The trees that are planned for removal are located within the TPZ.

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (No Impact)

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

For this analysis, "Agricultural Soils" and "Prime Agricultural Soils" designations via the Humboldt County WebGIS online mapping tool were utilized, which utilizes soils data from the Natural Resources

Conservation Service (NRCS). According to the Humboldt County WebGIS, the Project Area does not include Agricultural Soils or Prime Agricultural Soils. The Project would not remove agricultural land from production or result in a change in land use, as there is no such land presently under agricultural use within the Project Area. No impact would result.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? (No Impact)

In the Project Area there are no properties enrolled in Williamson Act contracts, and the WWTF is zoned as Agricultural Exclusive. The Project Area is an active WWTF not presently used for agricultural purposes and is not suitable for agricultural revenues. The Project would not alter the current land use. Zoning within the Project Area is further discussed in Section 4.11 (Land Use and Planning). No impact would result.

c, d) Conflict with Forest Land Zoning or Convert Forest Land? (Less than Significant Impact)

The portion of the Project Area that contains TPZ lands includes the effluent pipe pathway which is proposed for replacement. The parcels are zoned as Timberland Production Zone, and zoning within the Project Area is further discussed in Section 4.11 (Land Use and Planning). The area along the effluent pipeline serves as an access road and vegetation along it is cut back regularly. This area is not presently or has recently been used for timber purposes. Up to approximately 0.91 acres of woody vegetation may be removed along the access road and at effluent pipe daylight points to enable installation of the proposed effluent pipeline. This temporary impact would not conflict with forest land zoning because the trees would be removed to serve a public purpose (i.e. utility infrastructure improvements). Additionally, this area is not being utilized for timber production. A less than significant impact would result.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? (No Impact)

As discussed above in questions c and d, the Project may include the removal of up to 0.91 acres of woody vegetation. This temporary impact would not result in the conversion of forest land to non-forest use because removal is along an existing service road. Potential biological impacts associated with tree removal are discussed in Section 4.4 (Biological Resources). There are no other changes in the existing environment caused by the Project that would result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use in or adjacent to the Project Area. No impact would result.

4.3 Air Quality

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

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

For construction emissions, the NCUAQMD has indicated that emissions are not considered regionally significant for projects when construction would be relatively short in duration, lasting less than one year. Construction would likely occur within a single construction season, however, may require two construction seasons. Each construction season would last for approximately six to eight months. It's anticipated that Project construction would occur during the dry season in either 2024 and/or 2025. Emissions related to construction were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 and are discussed below (also see Appendix B – CalEEMod Modeling Information and Results).

a) Conflict with or obstruct implementation of the applicable air quality plan? (No Impact)

This impact relates to consistency with an adopted attainment plan. The NCUAQMD is responsible for monitoring and enforcing local, State, and federal air quality standards. Humboldt County is designated 'attainment' for all National Ambient Air Quality Standards. Pursuant to California Ambient Air Quality Standards, Humboldt County is designated attainment for all pollutants except PM10. Humboldt County is designated as "non-attainment" for the State's PM10 standard.

PM10 refers to inhalable particulate matter with an aerodynamic diameter of less than 10 microns. PM10 includes emission of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM10 emissions include unpaved road dust, smoke from wood stoves, construction dust, open burning of vegetation, and airborne salts and other particulate matter naturally generated by ocean surf. Therefore, any use or activity that generates airborne

particulate matter may be of concern to the NCUAQMD. The proposed Project would create PM10 emissions in part through vehicles coming and going to the Project Area and the construction activity associated with the Project.

To address non-attainment for PM10, the NCUAQMD adopted a Particulate Matter Attainment Plan in 1995. This plan presents available information about the nature and causes of PM10 standard exceedances and identifies cost-effective control measures to reduce PM10 emissions to levels necessary to meet California Ambient Air Quality Standards. However, the NCUAQMD states that the plan, "should be used cautiously as it is not a document that is required in order for the NCUAQMD to come into attainment for the state standard (NCUAQMD 2022)." Therefore, compliance with applicable NCUAQMD PM10 rules is applied as the threshold of significance for the purposes of analysis. NCUAQMD Rule 104 Section D, Fugitive Dust Emissions, is applicable to the Project.

Rule 104, Section D – Fugitive Dust Emissions is used by the NCUAQMD to address non-attainment for PM10. Pursuant to Rule 104 Section D, the handling, transporting, or open storage of materials in such a manner, which allows or may allow unnecessary amounts of particulate matter to become airborne, shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to covering open bodied trucks when used for transporting materials likely to give rise to airborne dust and the use of water during the grading of roads or the clearing of land. During earth moving activities, fugitive dust (PM10) would be generated. The amount of dust generated at any given time would be highly variable and is dependent on the size of the area disturbed at any given time, amount of activity, soil conditions, and meteorological conditions. Unless controlled, fugitive dust emissions during construction of the Project could be a potentially significant impact; however, implementation of Air Quality Control Measures during Construction is incorporated into the Project as detailed in Section 2.5 of this ISMND. Therefore, the Project appropriately addresses and controls fugitive dust emissions during construction and would be consistent with NCUAQMD's Rule 104 Section D. Project construction would not conflict with or obstruct implementation of the applicable air quality plan; Project construction would result in no impact.

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

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

This impact is related to regional criteria pollutant impacts. As identified in Section 4.3 Impact (a), Humboldt County is designated nonattainment of the State's PM_{10} standard. The Project Area is designated attainment for all other State and federal standards. Potential impacts of concern will be exceedances of State or federal standards for PM_{10}. Localized PM_{10} is of concern during construction because of the potential to emit fugitive dust during earth-disturbing activities.

Construction

Localized PM_{10}

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

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

The Basic Construction Measure controls recommended by the BAAQMD are incorporated into the Project and identified in Section 2.5 of this ISMND as Air Quality Control Measures during Construction. These controls are consistent with NCUAQMD Rule 104 Section D, Fugitive Dust Emission and provide supplemental, additional control of fugitive dust emissions beyond that which would occur with Rule 104 Section D compliance alone. Therefore, the Project would result in a less than significant impact for construction-period PM_{10} generation and would not violate or substantially contribute to an existing or projected air quality violation.

Construction Criteria Pollutants

For construction emissions, the NCUAQMD has indicated that emissions are not considered regionally significant for projects whose construction would be of relatively short duration, lasting less than one year. For project construction lasting more than one year or that involves above average construction intensity in volume of equipment or area disturbed, construction emissions may be compared to the stationary source thresholds.

The NCUAQMD does not have established CEQA significance criteria to determine the significance of impacts that would result from projects such as the proposed Project; however, the NCUAQMD does have criteria pollutant significance thresholds for new or modified stationary source projects proposed within the NCUAQMD's jurisdiction. NCUAQMD has indicated that it is appropriate for lead agencies to compare proposed construction emissions that last more than one year to its stationary source significance thresholds, which are:

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

If an individual project's emission of a particular criteria pollutant is within the thresholds outlined above, the Project's effects concerning that pollutant are considered to be less than significant.

Because of the anticipated construction duration, CalEEMod version 2020.4.0 was used to estimate air pollutant emissions from Project construction (Appendix B). Construction of the Project may require up to two construction seasons to complete.

Table 4.3-1 summarizes construction-related emissions for the Project. As shown in Table 4.3-1, the Project's construction emissions are far below the NCUAQMD's stationary sources emission thresholds. Therefore, the Project's construction emissions are considered to have a less than significant impact.

Table 4.3-1 Construction Criteria Pollutants and Ozone Precursors

Parameter	Emissions (tons per year)			
	ROG	NOx	CO	PM10
Project Construction	<0.1	0.5	0.5	<0.1
NCUAQMD Stationary Source Threshold	40	40	100	15
Significant Impact?	No	No	No	No

Operation

Following construction, the Project would not include any new stationary sources of air emissions. The Project would improve operation of the existing lift stations by installing equipment to support maintenance activities, replacing aging pumps with newer, more efficient pumps, and installing communications and monitoring equipment to provide automation and remote monitoring. Project operations would consist of activities similar to the existing facility operations. Operation and maintenance of the Project would not generate additional vehicle trips above existing conditions. The Project would not result in substantial long-term operational emissions of criteria air pollutants. Therefore, Project-generated emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment. The Project's contribution to a cumulative impact would be less than significant.

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

Activities occurring near sensitive receptors should receive a higher level of preventative planning. Sensitive receptors include school-aged children (schools, daycare, playgrounds), the elderly (retirement community, nursing homes), the infirm (medical facilities/offices), and those who exercise outdoors regularly (public and private exercise facilities, parks). Sensitive receptors exist within 200 feet of the lift stations, consisting of residential homes, and intermittently adjacent to the WWTF via the YMCA Camp Ravencliff which offers camp sessions from late July to early August. The nearest school is approximately 0.5 mile away from the Project Area.

Construction equipment and heavy-duty truck traffic generate diesel particulate matter (DPM) exhaust, which is a known toxic air contaminant. DPM from equipment exhaust and PM2.5 pose potential health impacts to nearby receptors if those receptors have prolonged exposure to substantial emissions. As required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]), construction contractors would be required to minimize idling times for trucks and equipment to five minutes, as well as to ensure that construction equipment is maintained in accordance with manufacturer's specifications. Given the limited daily activity for construction and continuous shifting of

the construction activities, the distance from the Project Area to sensitive receptors, prolonged exposure of sensitive receptors to substantial pollutant concentrations would not occur. The impact would be less than significant.

The primary source of operational emissions from the Project would be episodic maintenance and inspection trips to and from the Project site, which would not present a substantial source of diesel exhaust or other TAC. The Project's operational impact would be less than significant.

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

During construction, odors from the use of equipment during construction activities would be intermittent and temporary. Such odors generally dissipate rapidly from the source with an increase in distance. The impact would be less than significant.

Facilities known to produce odors include landfills, coffee roasters, wastewater treatment facilities, etc. The replacement effluent pipe would be underground, except where it crosses above Leggett Creek, and therefore would not produce any new sources of odor. Other Project elements that are above the surface such as headworks upgrade, new digester, or new covers for existing sludge drying basins would reduce the facilities production of fugitive odors from the existing conditions. Therefore, the impact would be less than significant.

4.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		✓		
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		✓		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				✓
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

The Project would involve the clearing and grubbing of vegetation within portions of the proposed Project, particularly within the effluent pipeline pathway. Outside of the effluent pipeline pathway vegetation removal would be limited because proposed Project elements would be installed in areas that are either already developed or areas that do not contain vegetation. Construction staging areas would be located within the WWTF, lift stations, or road shoulders located outside the Project Area. Natural habitat is present within the Project Area, and baseline conditions include Leggett Creek, vegetation communities, and habitat for special status species as described below.

A Biological Resources Evaluation (BRE) was prepared to evaluate baseline environmental conditions within the Project Area and to determine the potential for special status plants, wildlife species, or Sensitive Natural Communities (SNCs) to occur and is attached as Appendix C (GHD 2022). Special status species include those that are federal- or State-listed under the federal or state Endangered Species Act (ESA; CESA), State fully protected (FP), State species of special concern (SSC), species on the California Department of Fish and Wildlife (CDFW) Special Animals List (SAL), or State rare, among others. Information in the BRE was compiled through a review of literature and database searches. Database searches encompassed nine U.S. Geological Survey (USGS) quadrangles (quads) centered on the Project Area quad (Miranda) and the surrounding eight quads: Weott, Myers Flat, Blocksburg, Fort Seward, Harris, Garberville, Briceland, and Ettersburg. Sources reviewed included the California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants, U.S. Fish and Wildlife Service - Information for Planning and Conservation (IPaC) tool, and the National Oceanic and Atmospheric Administration - Fisheries West Coast Region California Species List Tools. The BRE established a Biological Study Area (BSA) that included a 500-foot area around the Project Area footprint. A wildlife habitat assessment, field surveys for special status plants, and mapping of SNCs occurred and is summarized in the BRE (see Appendix F of the BRE [attached as Appendix C] for an on-site species list of wildlife observed). Mapped SNCs include tanoak forest, Douglas-fir tanoak forest, and redwood forest. No riparian habitat was observed within the Project Area footprint.

A delineation of aquatic resources (wetlands, creeks, etc.) within the Project Area footprint was conducted, and two non-jurisdictional three-parameter wetlands (i.e. percolation ponds) and one perennial creek (Leggett Creek) were observed. The South Fork Eel River (SF Eel River) is adjacent to the Project Area. Leggett Creek runs into the SF Eel River and is thus USACE and Regional Board jurisdictional, however was not mapped because no work is proposed within it. Additionally, it is located in a deep canyon and access to it was unsafe.

According to the BRE (GHD 2022):

> *The Project Study Boundary and BSA is composed of secondary growth coniferous and hardwood forest habitat, with a portion adjacent to the WWTF extending towards the SF Eel River. The canopy in this section of the PSB is well established, with a diverse understory of shrubs and herbaceous plants. Leggett Creek crosses over a section of the PSB, which has known Coho Salmon and Steelhead occurrences (CDFW 2007). In the northernmost section of the PSB, non-native grasses dominant the understory below tanoak, Douglas fir, and other oak species. The five pump stations are along roads, primarily in residential areas. The habitat surrounding the pump stations includes coast redwood, other coniferous and hardwood species, and private properties.*

See Appendix A of the BRE (attached as Appendix C) for figures depicting biological resources.

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

Impact analysis in this section is based on the Project's BRE analysis. Sensitive and special status species and communities known to occur or have moderate or high potential to occur within the Project Area are identified below. The potential for special status species and communities to occur was determined by: (1) reviewing the current distribution of each species and whether it overlapped with the BSA; (2) reviewing the documented occurrence information from field surveys, CNDDB and other information sources (including

Bat Acoustic Monitoring Visualization Tool [BatAMVT] 2022, Bumble Bee Watch 2022, eBird 2022, iNaturalist 2022); (3) comparing the habitat associations of each species with habitat quality and conditions in and adjacent to the Project Area (within the BSA), based on existing information (e.g., field surveys, elevation, aerial imagery); and (4) using qualified professional judgement to evaluate habitat quality and the relevance of occurrence data, or the lack thereof. Species or sensitive resources which are likely to be impacted as a result of the Project and require specific mitigation measures to lessen these impacts are further summarized below.

The construction of the Project is anticipated to impact special status wildlife species through noise, visual disturbance, and by physically disturbing or displacing habitat areas. In addition, wildlife species may potentially be permanently or temporarily displaced, injured, or killed, during habitat clearing and grubbing. Wildlife species may also be potentially injured or killed during earthmoving activities (i.e., crushing, burying, entrapment) or from being run over by construction equipment. Plant species may be potentially impacted during clearing and grubbing, equipment staging, and tree limbing or removal.

The operational phase of the Project has little potential to impact special status species above and beyond existing operations, because proposed operations would not substantially differ from existing operations. No new lighting is proposed under the Project. Therefore, no new operational impacts are anticipated.

Special-status Plant Species

No federally listed plant species that are regulated by the USFWS under the ESA were identified during scoping as being previously recorded within the BSA. One CESA listed plant was identified during scoping as previously recorded within the vicinity of the Project: Humboldt County milk-vetch. The scoping query yielded 16 special status plant species with CRPR rank of 1 or 2 that are not federally listed. Of the List 1 or 2 species identified during scoping, seven (7) have a moderate probability of occurring within the study area, and one (1) has a high probability of occurring within the Project Area. All other rare plant species identified during scoping have low potential of occurring and are not discussed herein.

No special status plant species were observed during floristic surveys of the Project Area. Seasonally appropriate surveys for special status plants were completed, including an early season survey in mid-May, and a follow-up for later blooming plants in July 2022. Surveys were timed to observe potentially occurring special status species during the blooming period. The May 17 survey was appropriately timed to observe early blooming potentially occurring plants such as Howell's montia (*Montia howellii*), which is known to occur along ephemerally moist roadside habitats in coniferous forest and for which there are several known occurrences in nearby quads north of the Project Area. The July survey was suitably timed to observe later blooming species such as white-flowered rein orchid (*Piperia candida*), seacoast ragwort (*Packera bolanderi* var. *bolanderi*), and Humboldt County milk-vetch (*Astragalus agnicidus)*, which may also occur in roadside habitats or within dry tanoak/Douglas fir forest types.

No impact to special status plants would occur because no special status plants are located within the Project Area.

Special-status Wildlife Species

Portions of the BSA are located in areas with human disturbance and existing noise from the WWTF, roads, and residential properties. However, various wildlife species were observed within or nearby the BSA including common species (black-tailed deer [*Odocoileus hemionus columbianus]*, western tiger swallowtail [*Papilio rutulus*], and western gray squirrel [*Sciurus griseus*]), as well as numerous migratory birds protected under the Migratory Bird Treaty Act (MBTA).

Federal Endangered Species Act Listed Wildlife Species

The following nine federally listed or under review wildlife species that are regulated by the USFWS under the ESA were identified during scoping the vicinity of the PSB (CNDDB at 9-quad search area) and Action Area/BSA (IPaC at Action Area-level): Pacific Marten (*Martes caurina*; threatened) Coastal Distinct Population Segment (DPS), Humboldt Marten (*Martes caurina humboldtensis*; threatened), Marbled Murrelet (*Brachyramphus marmoratus*; threatened), Northern Spotted Owl (threatened), Western Snowy Plover (*Charadrius nivosus nivosus*; threatened), Western Yellow-billed Cuckoo (*Coccyzus americanus*; threatened), Monarch Butterfly *(Danaus plexippus*; candidate), California Coastal ESU of Chinook Salmon (threatened), and SONCC ESU of Coho Salmon (threatened).

Six of the nine listed or under review species above are unlikely to occur in the Action Area due to a lack of suitable habitat present and/or the Action Area being outside of the species current range. The following three species have a moderate to high potential to occur within the Action Area: Northern Spotted Owl, Coho Salmon, and Chinook Salmon. The Northern Spotted Owl has a moderate potential to occur based on recorded observations nearby the Action Area and the habitat structure within and adjacent to the Action Area (see Table 6-3 within the BRE attached as Appendix C). Coho Salmon have a high potential to occur due to previous detections in Leggett Creek (CDFW 2007). Additionally, Chinook Salmon have a moderate potential to occur based on detections in the SF Eel River (Starks and Renger 2016).

California Endangered Species Act Listed, or Special Status Wildlife Species

Seven state listed or candidate wildlife species 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), as follows: Humboldt Marten (endangered), Marbled Murrelet (endangered), Western Yellow-billed Cuckoo (endangered), Little Willow Flycatcher (*Empidonax traillii brewsteri;* endangered), Northern Spotted Owl (threatened), SONCC ESU Coho Salmon (threatened), and Summer-run Steelhead Trout (candidate endangered).

Four of the seven state listed species are unlikely to occur based on a lack of suitable habitat, recorded observations, or the BSA being outside of the species range. The Northern Spotted Owl, Coho Salmon, and Steelhead Trout have a moderate or high potential to occur based on detections within the BSA and present suitable habitat.

In addition to state listed species, occurrences for 18 other wildlife species with special state protections (or tracked via the CNDDB) were identified within the 9-quad search area. Seven of these species are unlikely to occur based on the absence of highly suitable habitat features within the BSA. Ten of these species have a moderate or high potential to occur within or nearby the BSA: Sonoma Tree Vole (*Arborimus pomo*; CDFW SSC), North American Porcupine (*Erethizon dorsatum*; CDFW Special Animals List), Western Red Bat (*Lasiurus blossevillii*; CDFW SSC), Long-eared Myotis (*Myotis evotis*; BLM Sensitive), Pacific Fisher (*Pekania pennanti*; CDFW SSC), Cooper's Hawk (*Accipiter cooperii*; CDFW WL), Osprey (*Pandion haliaetus;* CDFW WL), Western Pond Turtle (*Emys marmorata;* CDFW SSC), Northern Red-legged Frog (*Rana aurora*; CDFW SSC), Foothill Yellow-legged Frog (*Rana boylii*; CDFW SSC), and Southern Torrent Salamander (*Rhyacotriton variegatus;* CDFW SSC).

Mammals

There is moderate or high potential for special status mammals to occur within the Action Area/BSA, including: Sonoma Tree Vole (high potential), North American Porcupine (high potential), and Fisher (moderate potential). No removal of old growth or late seral habitat is proposed, and therefore no impacts are anticipated to Sonoma Tree Voles. The Project involves some excavation and there is potential for the North American Porcupine or Pacific Fisher to become stranded in deep excavations, which could result in a potentially significant impact. Therefore the following mitigation measure is proposed to avoid potential impacts to special status mammals.

Mitigation Measure BIO-1: Limitations to Overnight Excavation Areas

No steep sided excavations, defined as greater than two to one ratio shall be left open overnight during construction without fencing or other barrier to prevent animals from becoming trapped. Fencing shall be appropriately sized to limit North American Porcupine or Pacific Fisher from entering the excavation area. Contractors shall walk around large equipment prior to an early morning startup to ensure animals are not sheltering underneath. No loose dogs or other pets shall be allowed onsite during construction.

With implementation of Mitigation Measure BIO-1, impacts to special-status terrestrial mammals such as the North American Porcupine and Pacific Fisher would be reduced due to the restrictions on open excavations, check of equipment prior to start up, and pet control.

Bats

Based upon the reconnaissance-level site assessment, habitat for bats (tree cavities, loose bark, and riparian forest) is present in the Project Area. Trees and vegetation in the Project Area may provide habitat for a variety of bat species. Construction of the Project may adversely impact special status bat species through the removal or modification of trees and/or vegetation, ground disturbance, as well as potential noise disturbance, which could result in a significant impact. Two special status bats, Western Red Bat and Long-eared Myotis, have a moderate potential to occur within the Project Area. To reduce potential impacts to these species, the following mitigation measure is recommended for inclusion in environmental documentation.

Mitigation Measure BIO-2: Protect Special Status Bats

- If feasible remove confirmed or presumed-occupied bat roost habitat (trees with cavities or loose bark, or riparian forest) within the Project Area footprint only during seasonal periods of bat activity (when bats are volant, i.e. able to leave roosts) between March 1 and April 15 or September 1 and October 15, when evening temps rise to about 45 F, and when no rainfall greater than ½ inch has occurred in the last 24 hours.
- If presumed-occupied bat roost habitat cannot be removed during the volant period, i.e. Project activities occur during the bat maternity season (generally occur April 16 through August 30 or after October 15 when cooler temperatures can limit bats mobility), a qualified biologist shall conduct surveys within suitable habitat for special status bats. Survey methodology shall include visual examination with binoculars and may optionally utilize ultrasonic detectors to determine if special status bat species utilize the vicinity.
  - Surveys shall be conducted by a qualified biologist within seven days prior to construction in any areas where potential maternity roosts may be disturbed/removed. The preconstruction

surveys for bats may coincide with pre-construction surveys for other animals or plants if needed.

- Surveys shall include a visual inspection of the suitable habitat (i.e. trees with cavities, loose bark, or riparian forest) within the impact area. If the presence of a maternity roost or bat activity is confirmed, an appropriate buffer distance would be established in coordination with CDFW to ensure that construction noise would remain below disturbance thresholds for bats. If no bat utilization or roosts are found, then no further survey or action is required.

With inclusion of Mitigation Measure BIO-2, potential impacts to special status bats would either be avoided or minimized through appropriately timed removal of suitable habitat, or surveys and potential follow up coordination with CDFW to avoid impacts to special status bats.

Passerines and Raptors

There is potential for common and special status birds, protected under the MBTA and Fish and Game Code (FGC) to nest in the BSA. Potential Project impacts to special status birds during construction may include visual disturbance, habitat destruction, and noise disturbance which could result in a significant impact. The following mitigation measure is proposed to avoid potential adverse impacts or effects.

Mitigation Measure BIO-3: Protect Nesting Birds

– To avoid direct effects to special status or protected birds, ground disturbance and vegetation clearing shall be conducted, if possible, during the fall and/or winter months or outside of the avian nesting season (which is generally assumed to occur between March 15 – August 15). If ground disturbance or vegetation clearing cannot be confined to outside of the avian nesting season, a qualified biologist shall conduct pre-construction surveys within the PSB and immediate vicinity (defined for the purposes of this measure to be 500 feet outside 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. If the 500-foot vicinity of the PSB cannot be physically searched, it shall be visually and audibly assessed. The biologist shall 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, the qualified biologist shall conduct a supplemental avian pre-construction survey before Project work is reinitiated.

– If active nests are detected within the PSB footprint or immediate vicinity, the biologist shall flag a buffer around each nest. Construction activities shall avoid nest sites until the biologist determines that the young have fledged or nesting activity has ceased. If nests are documented outside of the PSB, but up to 500 feet of the PSB, 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. The qualified biologist shall monitor all nests at least once per week to determine whether birds are being disturbed. If signs of disturbance or distress are observed, the qualified biologist shall immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, and/or halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased.

With inclusion of Mitigation Measure BIO-3, potential impacts to special status nesting birds, and migratory or common nesting birds would either be avoided or minimized through removal of habitat outside of the nesting season, or surveys for nests and potential no-work buffers around observed nests.

Reptiles and Amphibians

One special status reptile (Western Pond Turtle) and three special status amphibians (Northern Red-legged Frog, Foothill Yellow-legged Frog, and Southern Torrent Salamander) have moderate to high potential to occur within the BSA given the habitat quality and available data, particularly within and on the banks of the SF Eel River. Although these species have moderate to high potential of occurring within the BSA, they are unlikely to occur within the Project Area due to the absence of suitable habitat (consistent sources of water, riparian forest, wetlands). However, due to the adjacency of suitable habitat and the potential for reptiles and/or amphibians to traverse into the Project Area resulting in potentially significant impacts (i.e. trampling or crushing), the following mitigation measure is recommended for inclusion into environmental documentation to avoid or reduce potential impacts to special status reptiles and amphibians.

Mitigation Measure BIO-4: Protect Special Status Reptiles and Amphibians

A pre-construction survey for special status reptiles or amphibians (i.e. Western Pond Turtle, Northern Red-legged Frog, Foothill Yellow-legged Frog and Southern Torrent Salamander) would occur within seven days of Project-related ground disturbance within areas of suitable habitat within the Project Area. Suitable habitat is assumed to include the southern portion of the WWTF and the Azalea lift station (i.e. areas that are closest to the SF Eel River). The biologist would relocate any specimens that occur within this area to nearby suitable habitat outside of the Project work zone.

With inclusion of Mitigation Measure BIO-4, potential impacts to special status reptiles or amphibians would either be avoided or minimized through pre-ground disturbance surveys and potential relocation of observed species.

Fish

No in-water work is proposed under the Project, however work over Leggett Creek would occur. No work is proposed within 100 feet of the SF Eel River. Standard construction BMPs such as use of straw wattles around areas of loose soil would be implemented in accordance with the Project's Construction General Permit which requires a Stormwater Pollution Prevention Plan (SWPPP). With inclusion of standard BMPs required under the Project's SWPPP, no impact to fish habitat quality is anticipated.

Project construction has the potential to cause potentially significant impacts to species due to earth movement and presence of equipment which could lead to trampling, crushing, and/or noise or visual impacts. With incorporation of Mitigation Measures BIO-1 through BIO-4, potential significant impacts would be reduced to a less-than-significant level. Project operation would not deviate substantially from existing operation, and therefore no operational impact to wildlife species is anticipated.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? (Less than Significant Impact with Mitigation)

Up to 0.91 acres of woody vegetation may be removed under the Project, including up to 0.32 acres of SNC habitat (tanoak forest alliance, Douglas fir-tanoak forest and woodland alliance, and redwood forest and woodland alliance). Anticipated areas of impact per specific SNC are displayed in Table 4.4-1.

Table 4.4-4.4-1 Sensitive Natural Community Anticipated Area of Impact

Habitat Type	State Rank[2]	Area Within the PSB	Area of Impact
Douglas fir-tanoak forest and woodland Alliance SNC	S3	25,675 sq ft (0.59 acres)	5,310 sq ft (0.12 acres)
Redwood forest and woodland Alliance SNC	S3.2	16,505 sq ft (0.38 acres)	8,380 sq ft (0.19 acres)
Tanoak forest Alliance SNC	S3.2	48,260 sq ft (1.11 acres)	165 sq ft (0.004 acres)
Total SNC Area of Impact:			13,855 sq ft (0.32 acres)

Although these areas were mapped as SNCs, it was noted during the field survey that numerous young trees (defined as less than six inches diameter at breast height [dbh]) were present in the areas mapped as SNCs. In a natural setting, not all of the saplings would survive due to crowding and competition. Therefore, only removal of trees considered an SNC with a dbh greater than six inches is considered a significant impact due to the habitat and ecological loss such tree removal would cause. The following mitigation measure is proposed to offset impacts to SNC habitat.

Mitigation Measure BIO-5: Avoid and Offset Impacts to SNCs

Where possible, impacts to SNCs shall be avoided. However, to offset impacts to SNCs replanting of trees shall occur as close to the area of impact as is feasible ("impact" is defined to include removal of tree species with a dbh greater than six inches that are considered to be a component of the SNC habitat). Trees shall not be replanted in a manner that could adversely affect the efficacy of the Project in the future (i.e. planting too close to the replacement effluent pipe). Species to be planted shall be equivalent to the species composition of the impacted SNC. The planting ratio shall be at least one to one and to the satisfaction of jurisdictional resource agencies, as required.

With incorporation of Mitigation Measure BIO-5, impacts to SNC habitat would be avoided or offset through replacement plantings in the vicinity of the impact. This potential impact would be less than significant with mitigation.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (Less than Significant Impact with Mitigation)

No federally protected wetlands exist within the Project Area. However, Leggett Creek occurs below the effluent pipeline within the Project Area and the SF Eel River is located adjacent to the Project Area. Refueling or other equipment maintenance near Leggett Creek or the SF Eel River has the potential to

deposit fuel or other hazardous materials into said waterways with could result in a potentially significant impact. To avoid this potentially significant impact Mitigation Measure BIO-6 would be implemented which requires equipment to be refueled at least 100 feet away from waterways. Additionally, Project elements include the installation of a new effluent pipeline and removal of the existing pipeline, occurring approximately 50 feet above Leggett Creek. Standard construction BMPs such as use of straw wattles around areas of loose soil would be implemented in accordance with the Project's SWPPP. Through the use of construction BMPs, loose soil or other debris is unlikely to fall into Leggett Creek and through Mitigation Measure BIO-6 hazardous materials would not enter Leggett Creek or the SF Eel River. Therefore a less than significant impact with mitigation would occur.

Mitigation Measure BIO-6: Protection of Water Quality and Wetlands

The following activities shall be implemented during construction:

- Erosion control measures shall be included on the 100% design plan set for areas of ground disturbance adjacent to Waters of the U.S. and State. Erosion control measures shall be implemented to reduce potential water quality degradation, dust, or erosion to areas adjacent to construction activities.
- Equipment shall be cleaned of deleterious materials before being delivered to the job site.
- Equipment shall be staged and materials shall be stockpiled at least 100 feet away from waterways.
- Refuelling shall not occur within 100 feet of waterways.
- Fueling trucks shall always be equipped with sealed spill kits.
- Spill containment booms shall be available on-site at all times during construction, staging of equipment or fueling when work occurs over live waterbodies (such as during effluent pipe installation and removal).
- Any construction equipment operating adjacent to or over Leggett Creek shall be inspected daily for leaks. Any oil, fuel, and grease residue that has the potential to fall from machinery shall be removed and properly disposed of.
- Impacts to herbaceous cover shall be offset by reseeding any unvegetated and impacted areas with a suitable seed mixture post-construction.

With incorporation of Mitigation Measure BIO-6, potential impacts to aquatic habitat would be avoided or offset through restrictions on where equipment can be refueled, requirements to contain spill kits and erosion control measures.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (No Impact)

The Project does not include any in-water work and would not result in new fencing or other potential barriers. Therefore, the Project would not interfere substantially with the movement of wildlife or adversely affect wildlife corridors or nursey sites. No impact would occur.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (No Impact)

The local policies applicable to this question include the policies from the Humboldt County General Plan (2017) listed below. No policies from the Garberville/Redway/Benbow/Alderpoint Community Plan (2006) (GRBA) are applicable to the Project.

> *BR-P1. Compatible Land Uses*
>
> *Area containing sensitive habitats shall be planned and zoned for uses compatible with the long-term sustainability of the habitat. Discretionary land uses and building activity in proximity to sensitive habitats shall be conditioned or otherwise permitted to prevent significant degradation of sensitive habitat, to the extent feasible consistent with California Department of Fish and Wildlife guidelines or recovery strategies.*
>
> *BR-P2. Critical Habitat*
>
> *Discretionary projects which use federal permits or federal funds on private lands that have the potential to impact critical habitat shall be conditioned to avoid significant habitat modification or destruction consistent with federally adopted Habitat Recovery Plans or interim recovery strategies.*
>
> *BR-P6. Development within Streamside Management Areas*
>
> *Development within Streamside Management Areas shall only be permitted where mitigation measures (Standards BR-S8 - Required Mitigation Measures, BR-S9 - Erosion Control, and BR-S10 - Development Standards for Wetlands) have been provided to minimize any adverse environmental effects and shall be limited to uses as described in Standard BR-S7 - Development within Streamside Management Areas.*
>
> *BR-P11. Biological Resource Maps*
>
> *Biological resource maps shall be consulted during the ministerial and discretionary permit review process in order to identify habitat concerns and to guide mitigation for discretionary projects that will reduce biological resource impacts to below levels of significance, consistent with CEQA.*
>
> *BR-P12. Agency Review*
>
> *The County shall request the California Department of Fish and Wildlife, as well as other appropriate trustee agencies and organizations, to review plans for development within Sensitive Habitat, including Streamside Management Areas. The County shall request NOAA Fisheries or U.S. Fish and Wildlife Service to review plans for development within critical habitat if the project includes federal permits or federal funding. Recommended mitigation measures to reduce impacts below levels of significance shall be considered during project approval, consistent with CEQA.*
>
> *BR-P13. Landmark Trees*
>
> *Establish a program to identify and protect landmark trees, including trees that exhibit notable characteristics in terms of their size, age, rarity, shape or location.*

The Project is expected to require a Streamside Management Area permit, which would be bundled with the Conditional Use Permit, from Humboldt County. Impacts to the Streamside Management Area are offset by

the revegetation of SNCs. The Project does not conflict with any of the goals or policies listed above, as it would be constructed in accordance with all county, state and federal permits. No impact would occur.

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

The Project Area do not overlap any existing active or proposed HCPs according to a current list from the Environmental Conservation Online System (ECOS) managed by USFWS (USFWS 2022a), NMFS West Coast HCPs (NOAA Fisheries 2022), and CDFW's list of HCPs and Natural Community Conservation Planning (NCCP)s (CDFW 2022a). Therefore, no impact would occur.

4.5 Cultural Resources

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

The cultural resources impact analysis in this ISMND is based on a confidential Cultural Resource Investigation Report prepared for the Project by Roscoe and Associates (RA 2022). Roscoe and Associates staff submitted a records search request to the Northwest Information Center (NWIC) of the California Historic Resource Information System (CHRIS). The search included a 0.5 mile radius around the Project Area boundary, which is known as the Area of Potential Effect (APE). Roscoe and Associates also submitted a Sacred Lands File Search Request to the Native American Heritage Commission (NAHC) on August 4, 2022. The NAHC staff responded by email on October 3, 2022, stating that the Sacred Lands File search was negative, and provided a list of Tribal representatives and individuals to be contacted regarding the Project.

A recent study was conducted by Zalarvis-Chase and Hollreiser (2020) in the WWTF APE, which overlapped with a recorded archaeological resource (P-12-000874). This resource is noted as containing an extensive midden deposit with an array of artifacts and tool types. Evaluative test excavations by Origer (1993) show conclusively that this resource contains significant and intact pre-contact deposits of considerable age. During their survey, Zalarvis-Chase and Hollreiser (2020) found midden soils, chert flakes, a groundstone fragment, two slab-mortars, a chert tool, and bedrock mortars were within the recorded site boundary. Origer notes that further developments to the WWTF should take into careful consideration the preservation of the high integrity, intact portions of this site. As part of the identification effort, RA conducted correspondence with local tribal representatives. Mr. Roscoe initiated this effort by calling the Tribal Historic Preservation Officer (THPO) for the Bear River Band of Rohnerville Rancheria (Bear River Rancheria or BRBRR) Melanie McCavour in late September 2022. THPO McCavour and Assistant THPO Ana Canter participated in the field survey of the WWTP APE on August 3, 2022, where they were provided with preliminary project maps. Roscoe and Associates conducted a field survey on September 20, 2022.

On September 23, 2022, RA sent follow up letters to the Bear River Rancheria Tribal Historic Preservation Officer (THPO) McCavour and Assistant THPO Ana Canter. Each letter included a brief project description and the most recent project maps including the lift stations. Roscoe and Associates also notified tribal representatives of the survey results and proposed a recommendation for cultural monitoring of all subsurface work at the WWTF APE only (included as Mitigation Measure CR-1). A written response was received via email from the Bear River Rancheria THPO Melanie McCavour that same day, on September 23, 2022. THPO McCavour responded in agreement with this recommendation.

After receiving the NAHC response, RA sent letters on October 10, 2022, containing the project description and maps to representatives of the Big Lagoon Rancheria, the Karuk Tribe, the Round Valley Reservation/ Covelo Indian Community, and the Yurok Tribe. No responses have been received to date from these groups.

The CEQA Guidelines define a historical or archaeological resource as: (1) a resource listed in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in the California Public Resources Code (PRC) Section 5020.1(k), or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

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

Based on the findings of Roscoe and Associates (2022), there are no historical resources, i.e. buildings or bridges, in the APE. Therefore, no impact would occur.

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

A documented archaeological resource (P-12-000874) described as a "high integrity intact deposit" was previously identified within the WWTF APE (Origer 1993, Zalarvis-Chase and Hollreiser 2020). The WWTF site as a whole has been recommended eligible for the California Register of Historical Places under Criteria D, as "the midden deposits mark intensively occupied locations which probably contain a wide range and high density of archaeological specimens" (Origer 1993). The midden is associated with archaeological site (P-12-000874). Outreach to the Bear River Rancheria yielded communication about the Project, potential impacts and protective measures to the identified archaeological resource. Outreach to remaining tribes based on the current NAHC consultation list did not result in any response.

Construction activities within the archaeological resource would include excavation of a 2-foot wide by 2-foot deep trench around existing subterranean structures to install footings for a greenhouse structure. Construction within the entire WWTF APE would include demolition of existing facilities (headworks and oxidation ditch aerator), site grading, excavation for structural pads/foundations and new treatment process facilities, installation of new pads, treatment process facilities, water retaining structures, tanks, pipelines and pumps within the existing footprint of the facility. Excavation depths within the WWTF APE are expected to range from surface impacts to 12 feet below the surface, and excavation within the documented archaeological resource would not exceed two feet in depth.

The entire WWTF APE has been previously disturbed particularly in the area immediately surrounding the existing subterranean structures. The proposed 2-foot wide by 2-foot deep trench to be excavated around the perimeter of each drying bed structure located within the archaeological site would likely encounter archaeological materials, however this area was previously disturbed during the installation of the drying beds. Additionally, the two-foot depth is not expected to reach undisturbed areas with intact archaeological resources (midden), i.e. the depth of previous disturbance is greater than two feet. However, the opportunity to potentially disturb an archaeological resource within the WWTF APE exists and, if it occurred,

could be considered a significant impact. Mitigation Measure CR-1 is proposed which includes production of an archaeological resource monitoring plan and monitoring to occur during construction to reduce this potentially significant impact to a less-than-significant level.

Mitigation Measure CR-1: Protect Archaeological Resources

The following measure shall be completed for all subsurface work within the WWTF APE.

- Excavations within the WWTF APE and within the archaeological site P-12-000874 shall not exceed the proposed excavation footprint. Work in the area will be carefully performed so as not to disturb more of the midden deposit than is necessary for Project implementation.
- A Tribal Cultural Monitor from the Bear River Band of the Rohnerville Rancheria shall be present during all ground Disturbing activities within the WWTF APE.
- For all ground disturbing activities within the southern portion of the WWTF APE, where P-12-000874 is documented, a professional archaeologist who meets the secretary of interior standards shall be retained to conduct archaeological monitoring. The archaeological monitor will recover and document any artifacts or features that may contain pertinent data about the site. The archaeological monitor will prepare a monitoring report detailing any findings and update the site record if appropriate.
- Prior to project implementation, a monitoring plan should be drafted in consultation with the Bear River Band of the Rohnerville Rancheria to determine the specifics of postimplementation recording requirements, how discoveries will be addressed, and how collections will be curated or reburied. Consultation with the Native American Heritage Commission to determine the most likely descendant for this site may also be appropriate and will assist the consultation process should human remains be inadvertently discovered.

With incorporation of Mitigation Measure CR-1, potential impacts to the documented archaeological site (P-12-000874) would be reduced to a less than significant level through the adherence to the stated excavation depths and area, production of the monitoring plan, monitoring during construction, and proper handling of potential archaeological resources that could be discovered.

Roscoe and Associates does not recommend monitoring, nor did the Bear River band of the Rohnerville Rancheria representatives request monitoring, for the Azalea, Dogwood, Evergreen, Mill Street, and West Coast Lift Station APEs. In these locations construction would be limited to areas of previous heavy disturbance on filled or graded land. Despite a thorough investigation effort no significant cultural resources were observed in any of Lift Station APEs. However, ground disturbing Project activities always have the potential to inadvertently uncover subsurface archaeological material or human remains. In the event that materials or remains are unearthed, a significant impact could occur. While the likelihood of an archaeological discovery during Project implementation is low in this Project setting, Mitigation Measure CR-2 is proposed which provides means of responding to the circumstance.

Mitigation Measure CR-2: Inadvertent Discovery of Cultural Resources

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 20 meters (66 feet) of the discovery, per the requirements of CEQA (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.

With incorporation of Mitigation Measure CR-2, potential impacts to the inadvertently discovered cultural resources would be reduced to a less-than-significant level through stop work authority.

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

No human remains are known to exist within the Project Area. However, the Cultural Resources Investigation identified a portion of the APE to be archaeological sensitive. As such, the possibility of encountered human remains cannot be discounted, and the potential impact is considered significant. Mitigation Measure CR-3 is included to reduce the potential impact to human remains during construction to a less-than-significant level.

Mitigation Measure CR-3: Protect Human Remains if Encountered During Construction

If human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent to human remains (PRC, Section 7050.5). The lead agency shall contact the Humboldt County coroner who will 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 will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98.

Implementation of Mitigation Measure CR-3 would reduce the potential impacts to a less-than-significant level during construction because a plan would be implemented to address discovery of unanticipated human remains and to preserve and/or record those resources consistent with appropriate laws and requirements.

4.6 Energy Resources

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

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

Construction of the Project would involve a variety of earthwork and construction practices, involving the use of heavy equipment as discussed in Section 2.3 (Construction Activities) and Section 4.3 (Air Quality). Construction would require the use of fuels, primarily gas, diesel, and motor oil. In order to assess the potential impact of construction-generated emissions, construction GHG emissions were annualized over an assumed 30-year Project lifespan. Construction emissions were estimated using CalEEMod version 2020.4.0 and were estimated to be approximately 82 MTCO2e from all construction activities (Appendix B). The Project's construction emissions equal 2.7 MTCO2e per year when annualized over the assumed 30-year lifespan of the Project. Peak travel associated with Project construction would consist of approximately 10 trips (5 round-trips) per day for construction workers, and an estimated average 2 trips (1 round-trips) per day for materials hauling. Construction equipment would remain staged in the Project Area once mobilized. Excess soils and construction materials would be stored within designated staging areas. Excess materials may be re-used on site for backfill. It is anticipated that the contractor would haul additional excess materials off site for beneficial re-use, recycling, or legal disposal.

Inefficient construction-related fuels use would also be avoided due to the measures in Air Quality Control Measures during Construction (see Section 2.5 [Compliance with Existing Regulations and Standard BMPs]). Equipment idling times would be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes or less. Because construction would not encourage activities that would result in the use of large amounts of fuel and energy in a wasteful manner, and the incorporation of Air Quality Control Measures during Construction would reduce idling time, impacts related to the inefficient use of construction-related fuels would be less than significant.

Operation of the Project would include periodic maintenance and inspection, similar to existing conditions. These activities would not result in a substantial increase in energy use, and would not result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources. Operation of the Project would not generate additional vehicle trips nor result in an increase in energy use above existing conditions. The Project would improve operation and, therefore, improve energy efficiency of existing facilities by upgrading the existing lift stations (replacing aging pumps with newer, more efficient pumps, and installing communications and monitoring equipment to provide automation and remote monitoring), upgrade the

existing headworks, install an new digester, and install new covers for existing sludge drying basins. The potential for wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant.

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

There are no local plans for renewable energy that would apply to the Project site. Implementation of the Project would not obstruct a state plan for renewable energy. The Project would not conflict with or inhibit the implementation of the State Energy Action Plan, or other State regulations. The Project would not inefficiently utilize energy due to incorporation of Air Quality Control Measures during Construction (see Section 2.5 [Compliance with Existing Regulations and Standard BMPs]), which limits idling time and provides measures to protect air quality. The Project would temporarily require the use of equipment to construct the components of the Project; however, these activities would be temporary and would not interfere with the broader energy goals of the State.

Operationally, the Project would not impact operational automobile-related energy consumption. Operation and maintenance of the Project would not generate additional vehicle trips above existing conditions. The Project would improve operation of the existing lift stations by installing equipment to support maintenance activities, replacing aging pumps with newer, more efficient pumps, and installing communications and monitoring equipment to provide automation and remote monitoring. Additionally, other Project elements such as headworks upgrade, new digester, or new covers for existing sludge drying basins would reduce energy required to process wastewater. The majority of California's energy-related plans are not directly applicable to the Project or its operations; however, the Project complies with those plan requirements that apply. The Project would therefore not conflict with or obstruct a State or local plan for renewable energy or energy efficiency, as no component of the Project would require a new or increased energy source, beyond the temporary use of construction equipment. No impact would result.

4.7 Geology and Soils

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

Soils at the WWTF and lift stations have been previously disturbed and compacted during initial construction and subsequent improvements. According to the NRCS, the Project Area is predominantly comprised of the following soils: Gibsoncreek-Seelycreek complex, 5 to 30 percent slopes and Seelycreek-Madturkey-Gibsoncreek complex, 30 to 50 percent slopes; five other soil associations that combined cover

less than 16% of the Project Area are listed and described in the Custom Soil Resource Report (see Appendix C within the BRE, attached as Appendix C).

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

According to the California Geological Survey (CGS), there are no Alquist-Priolo Fault Zones in the Project Area, with the nearest being the San Andreas Fault Zone approximately 14 miles southwest of the Project (CGS 2022). The community of Redway and the Project Area are surrounded by the “non-active,” per CGS criteria, Undifferentiated Quaternary (< 1.6 million years) Garberville-Briceland fault zone (Humboldt County 2022a). The Project would not change the exposure of people or structures to risk of loss, injury, or death from fault rupture. Thus, no impact would result.

a.ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking? (Less than Significant Impact)

As discussed above under Impact a.i, the Project is situated close to the “non-active” Garberville-Briceland fault, located approximately 800 feet northeast and 1.25 miles southwest of the WWTF, and the “active” San Andreas Fault Zone, located about 14 miles southeast. The Humboldt County coast is a highly active tectonic region that has experienced numerous earthquakes of low to moderate strength, and historically has experienced the occasional very strong earthquakes. Seismicity in the region is attributed primarily to the interaction between the Pacific, Gorda, and North American plates. Project implementation would not increase risk of strong seismic ground shaking above existing conditions.

There are other local sources capable of producing strong seismic shaking in the Project Area. These include the Cascadia subduction zone (approximately 35 miles northwest of the Project site, offshore), and the Little Salmon fault zone (approximately 30 miles north of the Project site).

Because the Project is located within a seismically active area, the probability that strong ground shaking associated with large magnitude earthquakes would occur during the design life of the Project is high. Thus, the Project would be designed in accordance with California Building Code and consistent with the recommendations presented in the forthcoming geotechnical investigation (see Section 2.5 [Compliance with Existing Regulations and Standard BMPs]). However, the potential for seismic activity would be unaffected by construction and operation of the Project. Therefore, a less than significant impact would occur.

a.iii, a.iv, c, d) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction, landslides, or otherwise unstable soils? (No Impact)

Liquefaction is the transformation of saturated, loose, fine-grained sediment to a fluid-like state because of earthquake shaking or other rapid loading. Liquefaction is known to occur in loose or moderately saturated granular soils with poor drainage. The Project Area is not located on an area of potential liquefaction (Humboldt County 2022b).

Expansive soils can cause considerable distress to roads and building foundations as they “rise-and-fall” in accordance with the cycles of soil wetting (swelling) and drying (shrinking). Soils with high percentages of silicate clays are those that have the potential for shrinking and swelling. The California Building Code defines expansive soils as those with a plasticity index of greater than 15.

The proposed Project would be located on relatively level, previously developed and/or paved land. Though the community of Redway is surrounded by steep slopes and valleys, the Project Area is mapped as an area of low instability with no mapped landslides (Humboldt County 2022b; USGS 2022). Furthermore, the highest mapped plasticity index in the Project Area is 13, lower than the required 15 for expansive soils(NRCS 2022). Therefore, implementation of the Project would not increase the risk of landslides or otherwise unstable soils, and no impact would occur.

As stated in Section 2.5 (Compliance with Existing Regulations and Standard BMPs), the Project would be designed and constructed in conformance with the site-specific recommendations contained in the forthcoming geotechnical report prepared for the Project and any subsequent Project-related geotechnical reports. Project adherence to the recommendations in the geotechnical report during construction and operation would not modify the existing exposure to landslide, lateral spreading, subsidence, or collapse, and therefore no impact would occur.

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

Construction activities, including cut, fill, removal of vegetation, directional drilling, and operation of heavy machinery would disturb soil and, therefore, have the potential to cause erosion. Erosion and sediment control provisions prescribed in the Humboldt County Code, North Coast Regional Water Quality Control Board (NCRWQCB) regulations, and the California Building Code would be required as part of the Project. BMPs may include silt fences, straw wattles, soil stabilization controls, site watering for controlling dust, and sediment detention basins. A SWPPP is required (see Section 2.5 [Compliance with Existing Regulations and Standard BMPs]) in accordance with the State Construction General Permit. These mandatory ordinance requirements and permits are designed to maintain potential water quality impacts at a less than significant level during and post construction. Therefore, the potential soil erosion impact would be less than significant.

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

The purpose of the Project is to enhance reliability of an existing wastewater treatment and disposal system for the community of Redway. No new septic tanks or alternative wastewater disposal systems would be constructed. No impact would result.

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

Paleontological resources are the remains or traces of prehistoric animals and plants. Paleontological resources, which include fossil remains and geologic sites with fossil-bearing strata are non-renewable and scarce and are a sensitive resource afforded protection under environmental legislation in California. Under California Public Resources Code § 5097.5, unauthorized disturbance or removal of a fossil locality or remains on public land is a misdemeanor. State law also requires reasonable mitigation for adverse

environmental impacts that result from development of public land and affect paleontological resources (Public Resources Code § 30244).

It is unlikely that Project construction would impact potentially significant paleontological resources because the entirety of the Project occurs in areas that have already been disturbed (during initial WWTF and collection system installation). However, the possibility of encountering a paleontological resource during construction cannot be completely discounted, therefore, the impact related to the potential disturbance or damage of previously undiscovered paleontological resources, if present, is considered potentially significant.

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

Mitigation Measure GEO-1: Inadvertent Discovery of Paleontological Resources

In the event that fossils or other paleontological resources 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.

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

4.8 Greenhouse Gas Emissions

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

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

NCUAQMD has not adopted regulations regarding the evaluation of greenhouse gas (GHG) emissions in a CEQA document and has not established CEQA significance criteria to determine the significance of impacts with regard to GHGs. The NCUAQMD has stated that they would not comment adversely on the use of thresholds of significance from the Bay Area Air Quality Management District (BAAQMD) for projects within Humboldt County. The BAAQMD's 2017 CEQA Guidelines contain a recommended GHG threshold of 1,100 MTCO2e/year for project operations, and no threshold for project construction. However, the BAAQMD has recently revised their adopted recommended CEQA thresholds of significance for GHG. The BAAQMD's Justification Report for the newly adopted greenhouse gas thresholds identify the thresholds as specific for 'development projects' of commercial/residential development and other projects. Per the Draft Justification Report:

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

Additionally, the BAAQMD's Justification Report states:

> *There is no proposed construction-related climate impact threshold at this time. Greenhouse gas emissions from construction represent a very small portion of a project's lifetime GHG emissions.*

The proposed thresholds for land use projects are designed to address operational GHG emissions which represent the vast majority of project GHG emissions. (BAAQMD 2022)

Therefore, as the BAAQMD and NCUAQMD do not have recommended thresholds of significance to apply to construction-period emissions or roadway/infrastructure projects, the Sacramento Metropolitan Air Quality Management District's (SMAQMD) and South Coast Air Quality Management District's (SCAQMD) recommended GHG methodology and thresholds for construction impacts were applied. These thresholds of significance are consistent with the BAAQMD's previously-recommended 1,100 MTCO2e/year threshold for project operations.

For project construction, SMAQMD has a threshold of 1,100 metric tons of carbon dioxide ($MTCO_2e$) per year threshold of significance (SMAQMD 2021). SCAQMD recommends that construction emissions be amortized over the life of the project, defined as 30 years, and added to the operational emissions for comparison against the threshold of significance. In order to assess the potential impact of construction-generated emissions, the construction GHG emissions are annualized over an assumed 30-year project lifespan, added to operational emissions, and compared against a threshold of 1,100 MTCO2e.

Project construction activities would result in exhaust emissions from on-road trucks, worker commute vehicles, and off-road heavy-duty equipment. Construction would require clearing, earthmoving, and delivery equipment, as used for similar Projects. Construction emissions were estimated using CalEEMod version 2020.4.0 and were estimated to be approximately 82 MTCO2e from all construction activities, or 2.7 MTCO2e per year when annualized over the assumed 30-year lifespan of the Project. The Project operations would be similar to existing conditions, and would not result in more vehicle trips. Required maintenance of the Project would be similar to what maintenance requirements are currently. Therefore, the Project's would not generate an increase in operation-related emissions.

Project emissions of 2.7 MTCO2e per year (annualized construction) would be less than the 1,100 MTCO2e threshold. Therefore, the Project's impact would be less than significant.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (No Impact)

The California Air Resource Board (CARB) 2017 Climate Change Scoping Plan provides California's climate policy portfolio and recommended strategies to put the State on a pathway to achieve the 2030 target. The scenario includes ongoing and statutorily required programs, continuing the Cap-and-Trade Program, and high-level objectives and goals to reduce GHGs across multiple economic sectors. Existing programs, also known as "known commitments," identified by the 2017 Climate Change Scoping Plan include: SB 350, the Low Carbon Fuel Standard, CARB's Mobile Source Strategy, SB 1383 for short-lived climate pollutants and California's Sustainable Freight Action Plan. The high-level objective and goals recommendations cover the energy, transportation, industry, water, waste management, agriculture, and natural and working lands, and are to be implemented by a variety of State agencies.

Project construction would cause a temporary increase in GHGs; however, as discussed above Project emissions would not exceed the identified emission thresholds. The Project is analyzed for consistency with the 2017 Climate Change Scoping Plan in Table 4.8-1 – Consistency Analysis Between Project and Climate Change Scoping Plan.

Table 4.8-1 Consistency analysis between Project and Climate Change Scoping Plan

Scoping Plan Reduction Measures	Consistency/Applicability Determination
California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.	**Not Applicable.** This is a statewide measure that cannot be implemented by the Project or lead agency.
California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	**Consistent.** This is a statewide measure that cannot be implemented by the Project or lead agency. However, the standards would be applicable to the light-duty vehicles that would access the Project Area during construction.
Energy Efficiency. Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	**Not Applicable.** This is a measure for the state to increase its energy efficiency standards in new buildings. The Project would not result in new habitable buildings subject to the energy efficiency standards.
Renewable Portfolio Standard. Achieve 33 percent renewable energy mix statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.	**Not Applicable.** This is a statewide measure that cannot be implemented by the Project or lead agency.
Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard.	**Consistent.** This is a statewide measure that cannot be implemented by the Project or lead agency. The standard would be applicable to the fuel used by vehicles that would access the Project Area during construction.
Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375.	**Not Applicable.** This is a statewide measure calling for the development of GHG emission reduction targets.
Vehicle Efficiency Measures. Implement light-duty vehicle efficiency measures.	**Not Applicable.** This is a statewide measure that cannot be implemented by the Project or lead agency.
Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	**Not Applicable.** The Project does not propose any changes to modes of transportation of goods.

Scoping Plan Reduction Measures	Consistency/Applicability Determination
Million Solar Roofs Program. Install 3,000 MW of solar-electric capacity under California's existing solar programs.	**Not Applicable.** The Project does not involve structures with roofs.
Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.	**Not Applicable.** This is a statewide measure that cannot be implemented by the Project or lead agency.
Industrial Emissions. Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.	**Not Applicable.** This measure would apply to the direct GHG emissions at major industrial facilities. The Project is not industrial.
High Speed Rail. Support implementation of a high-speed rail system.	**Not Applicable.** This is a statewide measure that cannot be implemented by the Project or lead agency. The Project does not involve a high-speed rail system.
Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	**Not Applicable.** This is a measure for the state to increase its energy efficiency standards in new buildings. The Project would not result in new habitable buildings subject to the energy efficiency standards.
High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases.	**Not Applicable**. The Project would not include air conditioners or commercial refrigerators.
Recycling and Waste. Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	**Consistent.** The Project does not include a landfill. The Project would reduce construction waste with implementation of state mandated recycling and reuse mandates.
Sustainable Forests. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	**Not Applicable.** Although the Project is located in a rural setting, it would not adversely affect forestland. The Project would remove trees in the forested area between the existing WWTF and percolation ponds; however, trees would be removed to serve a public purpose (i.e. utility infrastructure improvements) and trees with dbh greater than six inches would be replanted at a ratio of at least one to one.

Scoping Plan Reduction Measures	Consistency/Applicability Determination
Water. Continue efficiency programs and use cleaner energy sources to move and treat water.	**Consistent.** The Project would not include an increase in water consumption or energy use associated with water treatment or transport. Project components would increase the efficiency of the existing water treatment system.
Agriculture. In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020.	**Not Applicable**. The Project does not include agricultural production.

As described in Table 4.8-1, the Project is consistent with AB 32, as outlined in the 2017 Climate Change Scoping Plans. Therefore, the Project would not conflict with AB 32 or the 2017 Climate Change Scoping Plan and no impact would occur.

4.9 Hazards and Hazardous Materials

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

To evaluate the Project Area with respect to the presence and location of existing and/or historical soil and groundwater contamination, GHD completed a regulatory database review of available online government records. The regulatory database review was completed to identify areas of potentially impacted soil and/or groundwater within and near the Project Area that could potentially pose an exposure risk to humans and/or the environment.

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

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

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

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

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

Project construction would be required to implement stormwater management requirements during construction in accordance with the SWRCB Construction General Permit (Section 2.5 [Compliance with Existing Regulations and Standard BMPs]). Stormwater management requirements for addressing materials management would be required, including proper material delivery and storage, spill prevention and control, and management of concrete and other wastes, as described in Section 4.10 (Hydrology and Water Quality).

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

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

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

The Project would utilize heavy machinery to perform construction-related tasks including grading, drilling, excavation, and transportation of materials. There is always the possibility when equipment is operating that an accident could occur, and fuel could be released onto the soil. A potentially significant impact could result from an accidental spill, especially in proximity to a wetland or waterway. This potential impact is addressed under Mitigation Measure BIO-6 (see Section 4.4 – Biological Resources). Mitigation Measure BIO-6 includes requirements to avoid refueling and equipment maintenance near streams and wetlands. Under Mitigation Measure BIO-6, equipment shall not be refueled within 100 feet of any perennial wetlands or waterways as well as other requirements as described in Mitigation Measure BIO-6 to protect the environment from the accidental release of hazardous materials. With the incorporation of Mitigation Measure BIO-6, potential impacts to the public or environment from an accidental spill would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (No Impact)

Redway Elementary is the nearest school to the Project site, located approximately 0.7 mile south of the WWTF (NCES 2022). The lift stations within the community of Redway are at minimum 0.5 mile away. Thus, no Project element is within 0.25 mile of an existing or proposed school. No impact would result.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (No Impact)

The Project Area is not located on, or within one mile of a site listed in the DTSC EnviroStar database (DTSC 2022). Further, the Project Area is not located on or within one mile of an active site included in the Cal/EPA's list of Sites Identified with Waste Constituents Above Hazardous Waste Levels Outside the Waste Management Unit, nor is the Project Area located on or within one mile of any active site included in Cal/EPA's list of active Water Board Cease and Desist Orders and Cleanup and Abatement Orders (Cal/EPA 2022). No impact would result.

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

The nearest airport to the Project Area is the Garberville Airport (O16), located approximately three miles south. The Garberville Airport is covered by the 2021 Airport Land Use Compatibility Plan (ALUCP) (ESA 2021) prepared for the Humboldt County Airport Land Use Commission (ALUC). Per the ALUCP, the

Project Area is not located within the Airport Influence Areas (AIA) (ESA 2021). Given the Project is not located within two miles of a public airport and is outside the AIA, no impact would result.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)

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

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

Road closures would not occur during Project construction, and therefore emergency response vehicles would not be impeded. Project operation would not require the closure of roads. The Project would not impair implementation or physically interfere with the established Humboldt County EOP, or Humboldt County HMP. Thus, emergency response or evacuation via existing roadways would not diminish compared to existing conditions. As the Project would not impair implementation of an emergency response plan or evacuation plan, no impact would occur.

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

Wildland fire is addressed in Section 4.20 (Wildfire). As noted in Section 4.20, the Project would not expose people or structures to a significant risk from wildland fires above and beyond existing conditions, thus a less than significant impact would result. Please see Section 4.20 for further discussion of the Project as it relates to wildland fire risks.

4.10 Hydrology and Water Quality

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

The Project is located adjacent to the SF Eel River and above a portion of Leggett Creek. In-water work would not occur. The effluent pipe (to be replaced) is located underground between the WWTF and the percolation ponds with the exception of the crossing over Leggett Creek.

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

As described in Section 2.5 (Compliance with Existing Regulations and Standard BMPs), the Project and operations would obtain coverage under SWRCB Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. In compliance with the NPDES requirements, a Notice of Intent (NOI) would be prepared and submitted to the NCRWQCB, providing notification and intent to comply with the State of California Construction General Permit. In addition, a Construction SWPPP would be prepared for pollution prevention and control prior to initiating site construction activities. The Construction SWPPP would identify and specify the use of erosion sediment control BMPs for control of pollutants in stormwater runoff during construction related activities, and would be designed to address water erosion control, sediment control, off-site tracking control, wind erosion control, non-stormwater management control, and waste management and materials pollution control. A CDFW Lake and Streambed Alteration Agreement (LSAA) may be required due to Project work above Leggett Creek, which would also contain Project-specific practices to protect water quality and riparian habitat.

Potential impacts to water quality could result from sediment mobilization during Project construction. Construction activities such as site clearing, trenching, grading, excavation, and material stockpiling could leave soils exposed to rain or surface water runoff that could carry soil and/or soil contaminants (e.g., nutrients or other pollutants) into wetlands and/or waterways near the site (i.e. Leggett Creek and the SF Eel River). This potential input of soil and/or soil contaminants could degrade water quality, and potentially violate water quality standards for specific chemicals, dissolved oxygen, suspended sediment, or nutrients. This impact could be potentially significant however would be addressed via the Project's forthcoming SWPPP and other regulatory permits (i.e. CDFW LSAA). With adherence to the BMPs and monitoring protocols in the forthcoming SWPPP and other regulatory permits, the potential impact to water quality from sedimentation would be reduced to a less-than-significant level.

Additionally, up to 1,600 feet (i.e. the entirety) of the effluent pipeline may be installed via horizontal directional drilling (HDD) or via trenching. Horizontal directional drilling has the potential to release drilling fluids into the surface environment through frac-outs. Drilling fluid, also commonly called "driller's mud" or "slurry," is a mixture of water and additives that is used to make the horizontal directional drilling process easier (Melfred Borzall 2022). The most common additives, which usually only account for around 3% of the mixture, are bentonite and polymer (sometimes a combination of the two), depending on the ground conditions (Melfred Borzall 2022). Bentonite is a type of clay that can be ground, refined and mixed with water to make a mud-like fluid used in the drilling process, hence the term "mud" (Melfred Borzall 2022). Proper HDD drilling fluid must be mixed correctly for the type of soil a bore will encounter (Melfred Borzall 2022). A frac-out is a condition where drilling fluid is released through fractured soils and bedrock into the surrounding rock and sand, which travels to the surface resulting in exposure of the soil and water to the drilling fluid additives. This impact would be potentially significant without mitigation, and is addressed in Mitigation Measure HWQ-1, below.

Mitigation Measures

The potential impact to water quality standards due to frac-out would be less than significant with the incorporation of Mitigation Measure HWQ-1 which would require development of an HDD contingency plan.

Mitigation Measure HWQ-1: Development of a Horizontal Directional Drilling Hydrofracture Contingency Plan

To avoid potential impacts related to a frac-out, an HDD Hydrofracture Contingency Plan for HDD of Project elements shall be in place prior to construction. The Plan shall include an anticipated drilling mud design that provides engineering properties and the anticipated fluid pressure required as the pilot hole is incrementally advanced in approximately 10- meter (30-foot) increments. The contractor shall be required to monitor and record the drilling fluid composition, drill fluid pressure and volumes, and have an inadvertent return contingency plan and associated equipment to minimize impacts. The driller's mud, spoils, water, and all other waste materials are to be legally disposed of with weight or volume tickets confirming legal disposal. The Plan shall include visual monitoring, monitoring pressures and volumes, observation during drilling, standards and specification to follow if a frac-out event occurs (i.e. of a minimum four-hour shutdown period), a cleanup plan, locations to place a frac-out tank or vac truck, and roles and responsibilities in the event of a frac-out event.

Implementation of Mitigation Measure HWQ-1 would mitigate potential impacts related to water quality standards and waste discharge requirements to a less-than-significant level by developing a contingency plan to avoid environmental impacts resulting from a frac-out during HDD.

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

The Project is located in the Garberville Town Area Groundwater Basin 1-032 (DWR 2004), which has a SGMA Basin Priority of "Very Low" and is not listed as "Critically Overdrafted" (DWR 2019). The Project would not increase impervious surfaces resulting in less groundwater recharge and would not pump or utilize groundwater resources. Similarly, the Project would not modify existing groundwater infiltration or management because the volume of discharged effluent material is not proposed to change under the Project. Following construction, the Project would not utilize groundwater and would not result in an increase in population or employment that would indirectly increase groundwater demand. The Project is not expected to result in any change in the use or recharge of groundwater. No impact would result.

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

The WWTF is relatively flat, however contains minor drainage swales. The percolation ponds north of Leggett Creek are approximately 75 feet higher in elevation than the WWTF. The general drainage pattern within the WWTF is downslope (either towards Leggett Creek or to the flat lower lands south of the WWTF). The lift stations are flat and mostly paved and do not contribute a substantial amount of drainage offsite. Project construction to occur at the WWTF includes replacement and improvements to existing infrastructure, and associated grading. No major earthwork that would substantially alter the drainage patterns within the Project Area is proposed within the WWTF. Construction within the lift stations involves minor earthwork to replace existing infrastructure, and would have no impact on existing drainage patterns. Project elements would not result in significant alteration of the existing drainage pattern of the Project Area. Implementation of the Project's forthcoming SWPPP would further serve to avoid potential water

quality impacts associated with erosion or siltation during construction. A less than significant impact would result.

c.ii, iii, iv) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? Or create or contribute runoff water with would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? Or impede or redirect flood flows? (No Impact)

The Project would not increase the area of impervious surfaces or alter topography, slope, or drainage to or near the SF Eel River, Leggett Creek, or any other tributary. Both on-site and off-site flooding, and contribution of stormwater runoff would remain unaffected. The Project would not provide a substantial additional source of polluted runoff. The Project Area is not located within the 100-year flood zone (Humboldt County 2022c). No impact would result.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (No Impact)

The Project Area is not located within a 100-year flood zone (Humboldt County 2022c), a tsunami inundation area (CGS 2021), or near a large body of water that may be affected by a seiche. No impact would result.

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

The relevant water quality control plan is the NCRWQCB's Basin Plan which establishes thresholds for key water resource protection objectives for both surface waters and groundwater. Implementation of the Project's forthcoming SWPPP would protect surface waters and therefore uphold the Basin Plan. The Project does not involve the use of groundwater resources and would not impact the quantity or quality of groundwater availability in the Garberville Town Area Groundwater Basin.

Additionally, the Project would meet and/or support the following Humboldt County General Plan Water Resource Element goals and policies that regulate hydrology and water quality during construction and operation of the Project: Storm Drainage (Policy WR-G10), Erosion and Sediment Discharge (Policy WR-P10), County Facilities Management (Policy WR-P11), Implementation of NPDES Permit (Policy WR-P35), Natural Stormwater Drainage Courses (Policy WR-P36), Erosion and Sediment Control Measures (Policy WR-P42), Storm Drainage Design Standards (Policy WR-P43), Storm Drainage Impact Reduction (Policy WR-P44), and Reduce Toxic Runoff (Policy WR-P45). No impact would result.

4.11 Land Use and Planning

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

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

The Project would involve improvements to existing wastewater infrastructure and would not propose new construction. Therefore no new Project elements exist and there would be no potential to physically divide an established community. No impact would occur.

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

The Project upholds existing wastewater management and services to the community of Redway which is in alignment to current Humboldt County General Plan policies. Due to the community services the Project would uphold the continuation of, no Project elements would conflict with a land use plan, policy or regulation. No impact would occur.

4.12 Mineral Resources

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

This section evaluates the potential impacts related to mineral resources associated with the Project. Aside from the gravel located on the SF Eel River floodplain, there are no additional mineral resources in the Project Area.

a, b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

The most predominant of the minerals found and mined in Humboldt County are aggregate resource minerals, primarily sand, gravel and rock, found along many rivers and streams. Although aggregate hard rock quarry mines are found throughout Humboldt County, there are no locally important aggregate or mineral resources on or in the vicinity of the Project Area. In addition, the Project is not in a mapped Surface Mining and Reclamation Act site. The Project would not result in the loss of known mineral resources of value to the region or state, or loss of local-important mineral resources. Therefore, no impact would result.

4.13 Noise

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

Current noise conditions within the Project Area adjacent to the WWTF consist of noise associated with the operation of the Redway WWTF e.g., mechanical equipment, motors, and truck and vehicular traffic. Current noise conditions sourced from the lift stations consist of intermittent motors and pumps. Background noise at the lift stations consist of vehicular traffic on Redwood Drive and Briceland Road. Sensitive receptors exist within 200 feet of the lift stations, consisting of residential homes, and intermittently adjacent to the WWTF via the YMCA Camp Ravencliff which offers camp sessions from late July to early August The nearest school is approximately 0.5 mile away from the Project Area.

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

Construction of the Project would result in a temporary noise increase associated with the use of construction equipment. Construction is expected to require approximately six to eight months per year to complete and is anticipated to occur in 2024 and/or 2025. Construction activities would be limited to daytime work hours between 7:00 a.m. to 7:00 p.m., Monday through Friday with occasional work on Saturdays. Construction at the WWTF would require heavy machinery and could affect users of Camp Ravencliff if present. No other sensitive receptors are located adjacent to the WWTF. Proposed work at the lift stations include the installation of electrical equipment onto existing infrastructure would require no heavy machinery and no earth work, and proposed pump stationary mounts and pump replacement which would require minor excavations. Sensitive receptors within 200 feet of the lift stations would not be substantially affected by the Project due to the short duration (less than a few weeks) and minor nature of excavations to support the pump mounts. Furthermore, Humboldt County has not established construction-

related noise standards. Standard N-S1 of the Humboldt County General Plan specifies the Land Use/Noise Compatibility Standards which are used as a guide to ensure compatibility of land uses. Generation of noise may occur in areas identified as “normally unacceptable” if mitigation measures can reduce indoor noise levels to “Maximum Interior Noise Levels” and outdoor noise levels to the maximum “normally acceptable” value for the given land use category. The noisiest activities of the Project would occur at the WWTF, where no sensitive receptors are located (except for intermittent campers at Camp Ravencliff located approximately 185 feet away). Due to the predominant absence of sensitive receptors and noise attenuation between the source of noise and potential campers, no mitigation measures are proposed. As the construction phase would be temporary and construction activities would be intermittent and limited to between 7:00 a.m. and 7:00 p.m., potential noise impacts generated during the construction phase would be less than significant.

In regards to Project operation, noise at the WWTF, and the lift stations, would be consistent with current levels and would not generate a significant amount of noise in excess of County standards. Therefore, no operational impact would result.

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

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

The noise and vibration evaluation assessed typical vibration levels that could be expected from construction equipment at a distance of 25 feet, inclusive of required equipment and methods for all four potential construction options. Project construction activities, such as drilling, the use of jackhammers, and other high-power or vibratory tools may generate substantial vibration in the immediate vicinity.

Table 4.13-1 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet (Caltrans 2020). Vibratory rollers typically generate vibration levels of 0.210 inches/second PPV at a distance of 25 feet. Vibration levels are highest close to the source and attenuate with increasing distance. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

Table 4.13-1 Typical vibration levels for construction equipment used during Project construction

Equipment	Reference PPV at 25 ft. (in/sec)
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Caltrans 2020

Project-related activities would not involve the use of explosives or other intensive construction techniques that could generate significant ground borne vibration or noise. The Project may utilize a vibratory roller, large bulldozer, jackhammer, and horizontal directional drilling for the effluent pipe replacement. Noise impacts from ground borne noise to humans are anticipated to be minor.

Given the closest residences to the WWTF are located approximately 0.3 mile away, potential vibration impacts are anticipated to be undetectable. Similarly, the closest potential sensitive receptor to the WWTF would be 185 feet, and according to Table 4.13-1 which shows PPV at 25 feet, potential vibrations would be barely felt at 185 feet. Heavy machinery would be used minimally at the lift stations, and potential vibration impacts would be minor given residences are greater than 25 feet from the lift stations. Therefore, groundborne vibration and noise would have a less than significant impact.

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

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

The nearest airport to the Project Area is the Garberville Airport (O16), located approximately three miles south. The Garberville Airport is covered by the 2021 Airport Land Use Compatibility Plan (ALUCP) (ESA 2021) prepared for the Humboldt County Airport Land Use Commission (ALUC). Per the ALUCP, the Project Area is not located within the Airport Influence Areas (AIA) (ESA 2021). Given the Project is not located within two miles of a public airport and is outside the AIA, no impact would result.

4.14 Population and Housing

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

The 2020 population for the community of Redway was estimated to be 1,247 people (US Census 2020). The proposed Project would replace and improve existing WWTF infrastructure for continued service to the existing community population.

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

The proposed Project does not include components that would directly or indirectly induce unplanned population growth. The purpose of the Project is to rehabilitate and replace aging infrastructure at the WWTF to provide better reliability and increase wastewater treatment capacity to provide sufficient treatment capacity during wet weather events; not to advance or facilitate future population growth. The Project is also improving lift station operations by installing equipment to support maintenance activities, replacing aging pumps and installing communications and monitoring equipment to provide automation and remote monitoring. The Project would therefore not result in population growth but would make the existing system more efficient and easier to maintain. The Project would not provide additional residential buildings and no permanent job opportunities would be created from the Project that would then require employees to move to the community of Redway or elsewhere in Humboldt County. No impact would occur.

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

Implementation of the Project would not displace existing housing units or residents. The construction of replacement housing would not be necessary to support project construction or operations. No impact would result.

4.15 Public Services

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

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

As discussed in Section 4.14 (Population and Housing), implementation of the Project would not induce population growth and, therefore, would not require expanded fire or police protection or facilities to maintain acceptable service ratios, response times, or other performance objectives. The Project itself results in an improvement to public utility facilities. The Project improvements would not result in the need to increase staffing, create new hazardous conditions, or result in a modification to the road system that would restrict access for emergency services.

Additional police protection is not required because the Project would not require increased WWTF maintenance staffing, and it's unlikely that the WWTF or lift stations, would be the target of theft or vandalism. The Project would not affect the Redway Elementary School because it would not induce population growth. The Project would use the access road through the John B. Dewitt Redwoods State Natural Reserve to deliver materials to the WWTF; however, it would not affect the reserve during Project operation beyond current levels. For the reasons stated above, no impact on public services would occur.

4.16 Recreation

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				✓

Recreational facilities near the Project Area include the John B. Dewitt Redwoods State Natural Reserve, and the YMCA Camp Ravencliff.

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

The Project proposes no new recreational amenity within Humboldt County. Enhancements to the WWTF and lift stations would not increase use to John B. Dewitt Redwoods State Natural Reserve, Camp Ravencliff, or other recreational facilities or parks. Construction and operation of the Project also would not modify, or impede, access to John B. Dewitt Redwoods State Natural Reserve, Camp Ravencliff, or other recreational facilities or parks. No impact would result.

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

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

4.17 Transportation

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

The WWTF component of the Project is not located on a public roadway, however the lift stations are located along public roadways. Project implementation at the lift stations would not block access along roadways. The Project does not include modifications to road networks.

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

The Project does not involve modifications to the Redway community street network. Construction would result in vehicle trips by construction workers and haul-truck trips for material off-haul and deliveries via Highway 101, Redwood Drive, Briceland Road, and the private graveled road to the WWTF. Construction-related traffic would be largely non-existent, due to the Project work either occurring at the WWTF or within the lift station footprints (off of public roadways). The number of construction-related vehicles traveling to and from the Project Area would vary daily. Due to the infrequency of truck traffic and the temporary nature of construction, Project construction would not conflict with plans, policies or programs related to the effectiveness of the circulation system. During construction, a less than significant impact would occur and no operational impact would occur.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (Less than Significant Impact)

CEQA Guidelines Section 15064.3, subdivision (b) establishes the criteria for analyzing transportation impacts. This Section determines that, for land use projects, “Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. [...] A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect

professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project." Cal. Code Regs. tit. 14 § 15064.3.

The OPR Technical Advisory provides various screening criteria related to VMT that quickly identify when a project should be expected to cause a less than significant impact without conducting a detailed VMT study. According to the OPR Technical Advisory, projects that generate fewer than 110 trips per day can be assumed to cause a less than significant transportation impact (OPR 2018). The Project would not create new buildings, new employees, increase the length of roadway, add new roadways, or increase the number of travel lanes. Operational maintenance is not anticipated to generate additional trips then currently occurs. Therefore, the impact would be less than significant.

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

The Project does not propose an alteration in the geometric design of a street or road. The proposed effluent pipe replacement would be located below ground, except the portion above Leggett Creek, and existing conditions along the temporarily impacted dirt service road would be restored to pre-Project conditions and would therefore not substantially increase potential hazards due to geometric design. There are no changes to land use associated with this Project. No impact would occur.

d) Result in inadequate emergency access? (Less than Significant Impact)

Construction activities would occur outside of the public right-of-way. During construction, Redwood Drive, Briceland Road, and the locked dirt road to the WWTF may experience minor and limited construction-related traffic. Construction related traffic may consist of earthwork and directional drilling equipment and support vehicles. Construction-related road or lane closures would not occur, and emergency access would not be limited. The potential impact would be less than significant.

4.18 Tribal Cultural Resources

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

a, b) Cause a substantial adverse change in the significance of a tribal cultural resource? (No Impact)

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

As part of the AB 52 process, GHD on behalf of the RCSD sent notifications for the opportunity to consult to appropriate tribal governments as identified by the Native American Heritage Commission. Notifications were distributed on August 26, 2022 to the Bear River Band of Rohnerville Rancheria (BRBRR). An email exchange occurred between GHD and BRBRR's Tribal Historic Preservation Officer (THPO), and a response was received from BRBRR on September 11, 2022. The BRBRR does not want to carry out consultation under AB52 because they determined that the Project is not likely to cause a substantial adverse change in the significance of a tribal cultural resource as defined under AB52. The AB52 consultation process for the Project is complete.

4.19 Utilities and Service Systems

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

The Project is a public utility project designed to rehabilitate and replace aging infrastructure at the WWTF to provide better reliability and increase wastewater treatment capacity to provide sufficient treatment capacity during wet weather events. The Project would also improve lift station operations via the installation of equipment to support maintenance activities, replacement of aging pumps and installation of communications and monitoring equipment to provide automation and remote monitoring. These proposed improvements would benefit the community of Redway and would protect the water quality of the SF Eel River from potential impacts associated with existing treatment and disposal operations during wet weather events.

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (No Impact)

The Project would result in various reliability improvements to the existing WWTF and lift stations to provide capacity for peak wet weather inflows, meet effluent quality requirements, and improve monitoring and maintenance. The WWTF footprint would not substantially expand. No impacts to Waters of the U.S., critical habitat or other sensitive resources are expected, and no significant environmental effects would occur. The Project would not directly or indirectly induce population growth in the community and would not alter the existing amount of wastewater generated, nor result in the need for new treatment methods. Therefore, no impact would occur.

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

The Project would not alter existing water supplies from pre-Project conditions, which typically adequately serve the WWTF and collection system. No impact would occur.

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

The Project would result in improvements to the existing WWTF via infrastructure replacement and repairs, which would improve wastewater treatment capacity during wet weather events. The WWTF would remain operational during construction; service would not be disrupted. The existing WWTF and collection system has adequate capacity to serve the Project's projected demand. No impact would occur.

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

Construction of the Project would result in a temporary increase in solid waste disposal needs associated with demolition and construction wastes. The solid waste providers in the area are the Humboldt Waste Management Authority (HWMA). The proposed Project would generate limited solid waste during construction and no waste during operation. Construction wastes would include, but not be limited to, excavated soils, construction waste resulting from the treatment upgrades at the WWTF including demolition of the headworks/oxidation ditch, cleared trees/vegetation/topsoil from the access road and effluent pipe replacement. Construction waste with no practical reuse or that cannot be salvaged or recycled would not be stockpiled on-site and would be legally disposed of via HWMA, or at a local transfer station. Solid waste produced in the County is trucked to State licensed landfills located in Anderson, California and Medford, Oregon in compliance with local, State, and federal regulations pertaining to solid waste disposal. These facilities have sufficient capacity to serve the Project's solid waste disposal needs; therefore, a less than significant impact is anticipated.

4.20 Wildfire

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

The Project is located within a State Responsibility Area (SRA) rated as either a “moderate” or “high” Fire Hazard Severity Zone (FHSZ) (CALFIRE 2007). The nearest land classified as a “very high” fire hazard severity zone is approximately 0.3 mile southeast of the WWTF (CALFIRE 2007). Redway Fire Protection District serves the Project Area. The closest fire station to the Project Area is the Redway Fire Station located approximately 0.6 mile south of the WWTF.

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? (No Impact)

A review of the Humboldt County EOP (Humboldt County 2015) indicates that the Project would not permanently impair emergency response activities nor established evacuation routes. Project operation would not deviate from existing conditions and therefore would not impair implementation or physically interfere with an established emergency response or evacuation plan; see Section 4.9 (Hazards and Hazardous Materials, Impact [f]) for discussion of the Project’s effect on emergency response and evacuation plans. The Project would not permanently impede access to any existing roads or pedestrian ways within the Project Area. No impact would result.

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

The lift stations are located in the developed community of Redway. The Project would not functionally change the lift stations or change their composition. The WWTF is located along a slope adjacent to the SF Eel River with 5-30% slopes, and similarly the Project would not functionally change the WWTF, however some infrastructure modifications are proposed.

Grasses, shrubs, and other vegetation are present along the Project Area, especially along the effluent pipeline. The vegetated portions could be susceptible to wildfire during Project construction or operation, as a result of accidental ignition. During construction, all hazardous materials and construction equipment would be appropriately used and stored pursuant to applicable regulations. Operation of the Project would not modify the slope or other factors which could exacerbate wildfire risk. Furthermore, the Project does not include any structures built for human occupancy. Due to the temporary nature of construction, the minimal amount of hazardous materials anticipated to be stored during the construction phase, the fact that the Project is not located within an area of “very high” fire risk, the lack of modifications to slope or other factors that could exacerbate wildfire risk, and given that the Project does not include any structures to be used for human occupancy, the Project would not exacerbate wildfire risks and thereby expose users to pollutants. A less than significant impact would result.

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

Development of the Project would not result in a need to expand wildfire protection infrastructure to the Project Area or in the immediate vicinity of the Project. New roads for fire defense, expanded water sources, or new power lines would not be required or are proposed. No impact would result.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes? (Less than Significant Impact)

The lift stations are located in a developed area containing homes, roads, businesses. The WWTF is located along a slope adjacent to the SF Eel River of 5-30% slopes and mapped as low instability (Humboldt County 2022b). Per Section 4.10 (Hydrology and Water Quality) the Project Area is excluded from the FEMA 100-year flood zone. If a wildfire were to occur, post-fire slope instability would be unlikely. Furthermore, completion of construction, the drainage pattern of the Project Area would be similar to existing conditions. No new structures are proposed downslope of the WWTF under the Project. Therefore, any potential impact would be less than significant.

4.21 Mandatory Findings of Significance

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

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

Potential Project impacts to air quality, biological and cultural resources are addressed in Section 4.3 (Air Quality), Section 4.4 (Biological Resources), Section 4.5 (Cultural Resources), and Section 4.18 (Tribal Cultural Resources), respectively. Mitigation measures identified throughout the ISMND include:

– Mitigation Measure BIO-1: Limitations to Overnight Excavation Areas
– Mitigation Measure BIO-2: Protect Special Status Bats
– Mitigation Measure BIO-3: Protect Nesting Birds
– Mitigation Measure BIO-4: Protect Special Status Reptiles and Amphibians
– Mitigation Measure BIO-5: Avoid and Offset Impacts to SNCs
– Mitigation Measure BIO-6: Protection of Water Quality and Wetlands

- Mitigation Measure CR-1: Protect Archaeological Resources
- Mitigation Measure CR-2: Inadvertent Discovery of Cultural Resources
- Mitigation Measure CR-3: Protect Human Remains if Encountered During Construction
- Mitigation Measure GEO-1: Inadvertent Discovery of Paleontological Resources
- Mitigation Measure HWQ-1: Development of a Horizontal Directional Drilling Hydrofracture Contingency Plan

With implementation of the recommended mitigation measures listed above and identified in this ISMND, the potential for Project-related activities to degrade the quality of the environment, including wildlife species or their habitat, plant or animal communities, or important examples of indigenous history, California history or prehistory would be reduced to less-than-significant levels.

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

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines § 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

As discussed in Section 4.10 (Land Use and Planning), the Project would improve wastewater infrastructure and collection system lift stations and is consistent with the goals and policies of the Humboldt County General Plan.

The following projects are ongoing or proposed and serve, for the purposes of this report, to judge the cumulative impacts of the Project discussed in this ISMND.

Redway Community Projects

Routine maintenance activities are consistently carried out by the RCSD for water and wastewater infrastructure upkeep. Maintenance activities include exercising of valves, testing of hydrants, and flushing of sewer lines on a regular basis.

No major construction projects are known to occur or be planned to occur at the Redway Elementary School in the next five years or foreseeable future (E. Ricca pers. comm. 2022).

Humboldt County Projects

There is a minor project occurring at the Redway Transfer Station including a new 2400 sq ft recycling building, a new 200 sq ft weigh shack with bathroom, a new scale, repairs and modification to existing refuse building which include a bathroom/office demolition, a new septic system, and upgrades to electrical system. This project would be completed with all required permits and regulatory BMPs and would therefore not cause a significant environmental impact.

Two additional projects that do not include ground disturbance are planned to occur in Redway, including a subdivision of a parcel into four parcels, and modification to an existing CUP. These projects would not contribute to unplanned population grown and would not have an adverse environmental impact due to the absence of activities.

Caltrans Projects

Per communication with Jesse Robertson of Caltrans on October 18, 2022, there is one project currently under construction located approximately 4.25 miles north of the Project, and two projects planned for the foreseeable future (through 2025) that would occur across portions of Humboldt County and therefore may occur in the vicinity of the Project. The project currently under construction is a bridge rehabilitation project that includes strengthening of bridge structures. No in-water work is proposed and this project does not spatially overlap the proposed Project analyzed in this ISMND. The two future projects are a drainage improvement and pavement rehabilitation projects. The drainage improvement project would occur at various locations from the Mendocino County border to the Eel River Bridge near Scotia, CA located 26.5 aerial miles from the Project. The pavement rehabilitation project would occur from the Humboldt County border to approximately Benbow, located approximately five miles south of the proposed Project. These projects do not spatially overlap with the elements of the proposed Project because the proposed Project is not located on or along Highway 101, and because the pavement rehabilitation project would occur south of the proposed Project. An environmental impact assessment would be performed for all projects consistent with Caltrans' established processes. As all projects would include BMPs and other preventative measures and permitting requirements to avoid potential impacts to public trust resources such as water and air quality, the potential for cumulative impacts is extremely limited.

The Project impacts would not add appreciably to any existing or foreseeable future significant cumulative impact, such as visual quality, cultural resources, biological, traffic impacts, or air quality degradation. Incremental impacts, if any, would be negligible and undetectable. Any applicable cumulative impacts to which this Project would contribute would be mitigated to a less-than-significant level. Incremental impacts, if any, would be very small, and the cumulative impact would be less than significant. Because the proposed Project would not result in significant impacts after mitigation, and because the proposed Project is a wastewater infrastructure improvement project to meet current capacity rather than a development project that could add to existing and future population growth and development in the area, the proposed Project would not contribute to any significant cumulative impacts which may occur in the area in the future. Therefore, the impact would be less than significant.

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

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

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6. Report Preparers

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Chryss Meier, Senior Environmental Planner, Author

Misha Schwarz, Senior Environmental Scientist, Reviewer

Giuseppe Tomasino, Senior Project Manager, Reviewer

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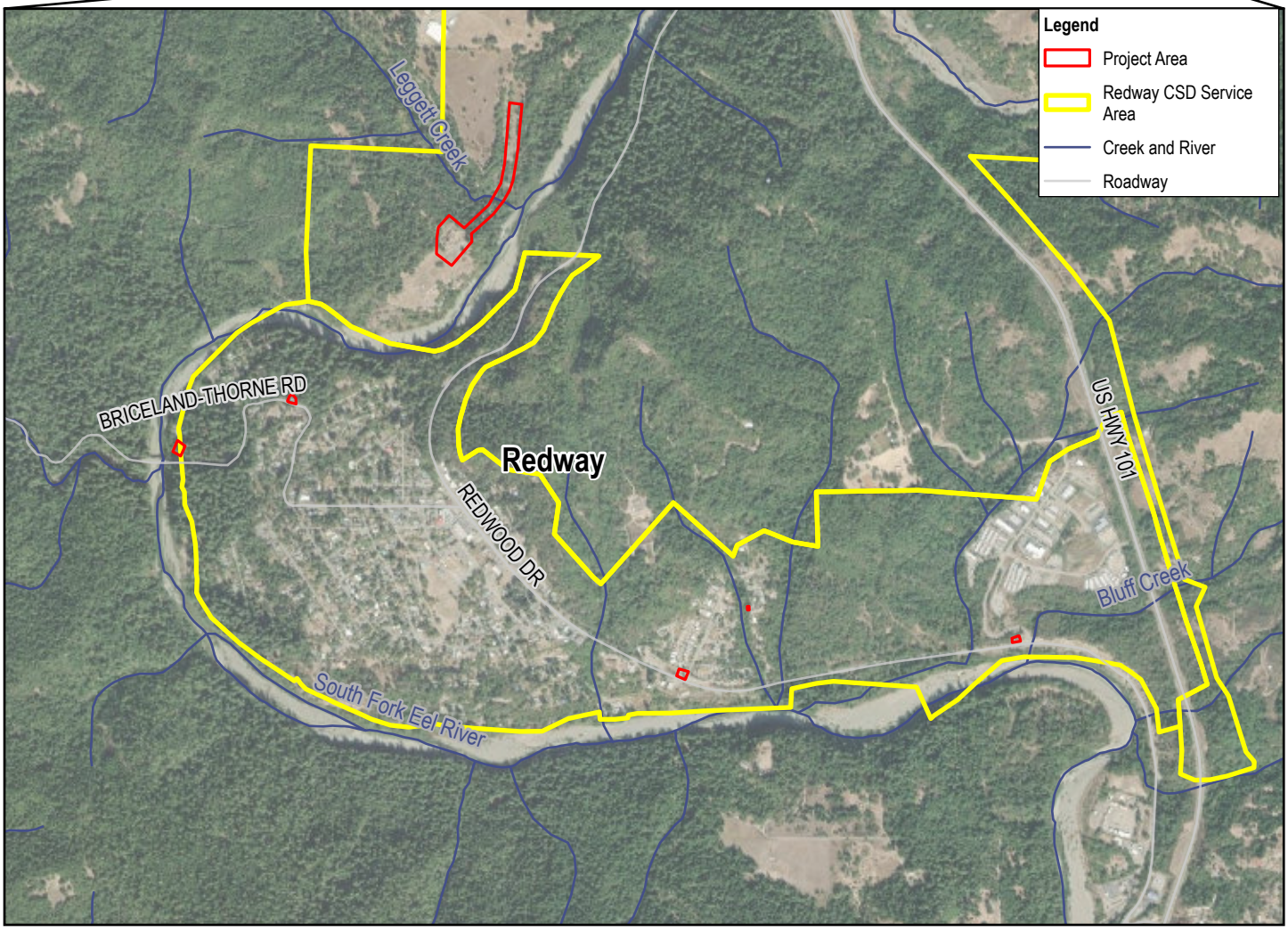
Melinda Salisbury, Cultural Resource Specialist

Kelly Hughes, Cultural Resource Specialist

Appendices

Appendix A

Figures



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Redway Community Services District
Wastewater System Infrastructure Improvement Project

Project No. **11214230**
Revision No. **-**
Date **Nov 29, 2022**

Project Vicinity

FIGURE 1

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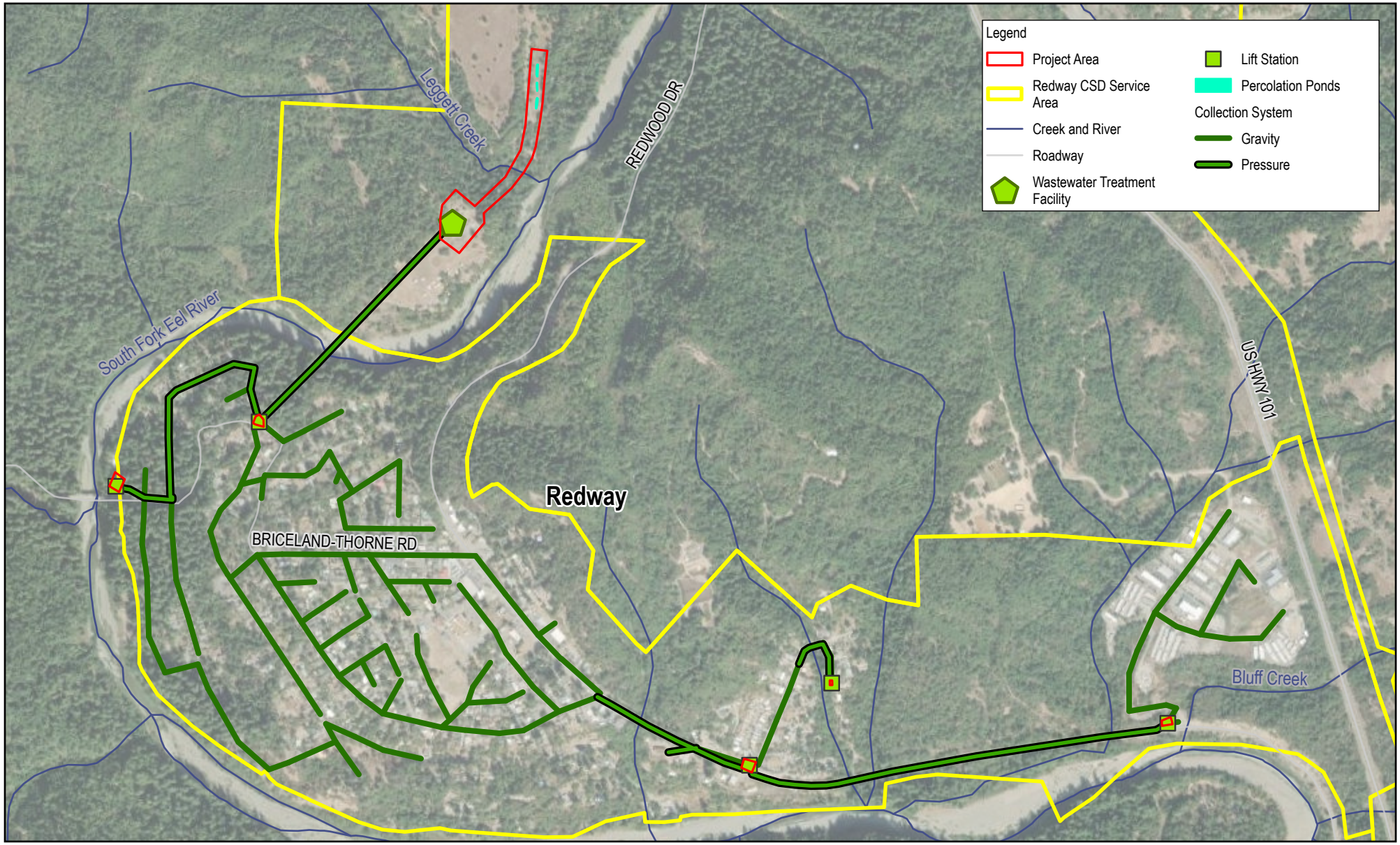
Data source: GHD project area, Sept 22, 2022; NHD, 2020; Humboldt County Roads and CSD boundary; World Topographic Map: Esri, HERE, Garmin, FAO, USGS, EPA, NPS; World Imagery: Maxar; World_Transportation: Esri, HERE. Created by: jclark2



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Redway Community Service District
Wastewater System Infrastructure Improvement Project

Project No. **11214230**
Revision No. **-**
Date **Nov 29, 2022**

Project Area

Figure 2

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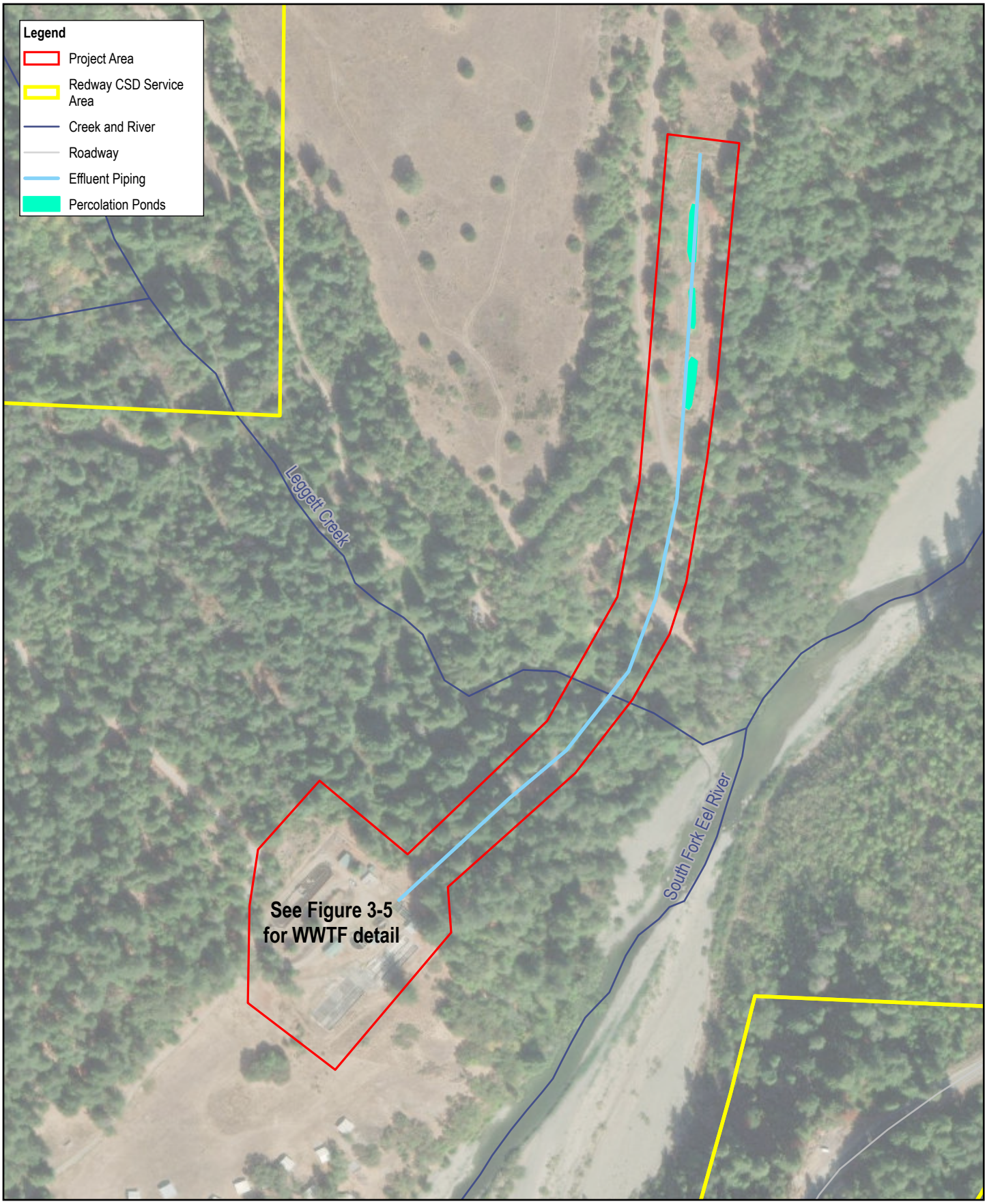
Print date: 29 Nov 2022 - 16:14

Data source: Project boundary, Sept 22, 2022; Collection system, GHD, 2021; Percolation ponds, GHD, 2022; CSD boundary and roads, Humboldt county; water lines, NHD, 2020 edited by GHD 2022;World Imagery: Maxar. Created by: jclark2



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GHD

Redway Community Services District
Wastewater System Infrastructure Improvement Project

Project Components
WWTF and Effluent

Project No. **11214230**
Revision No. **-**
Date **Oct 12, 2022**

FIGURE 3-1

G:\561\11214230\GIS\Maps\Deliverables\11214230_ISMND.aprx - 11214230_1003_ProjectComponentsMB_RevC
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Data source: PSB, GHD, 6/17/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

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Map Projection: Lambert Conformal Conic
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Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

Redway Community Services District
Wastewater System Infrastructure Improvement Project

Project Components Azaela and Dogwood

Project No. **11214230**
Revision No. **-**
Date **Oct 12, 2022**

FIGURE 3-2

G:\561\11214230\GIS\Maps\Deliverables\11214230_ISMND.aprx - 11214230_1003_ProjectComponentsMB_RevC
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Data source: PSB, GHD, 6/17/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

Paper Size ANSI A

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Horizontal Datum: North American 1983
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GHD

Redway Community Services District
Wastewater System Infrastructure Improvement Project

Project Components
Mill St and West Coast

Project No. **11214230**
Revision No. **-**
Date **Oct 12, 2022**

FIGURE 3-3

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Paper Size ANSI A

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Feet

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

N

GHD

Redway Community Services District
Wastewater System Infrastructure Improvement Project

Project Components Evergreen

Project No. **11214230**
Revision No. **-**
Date **Oct 12, 2022**

FIGURE 3-4

G:\561\11214230\GIS\Maps\Deliverables\11214230_ISMND.aprx - 11214230_1003_ProjectComponentsMB_RevC
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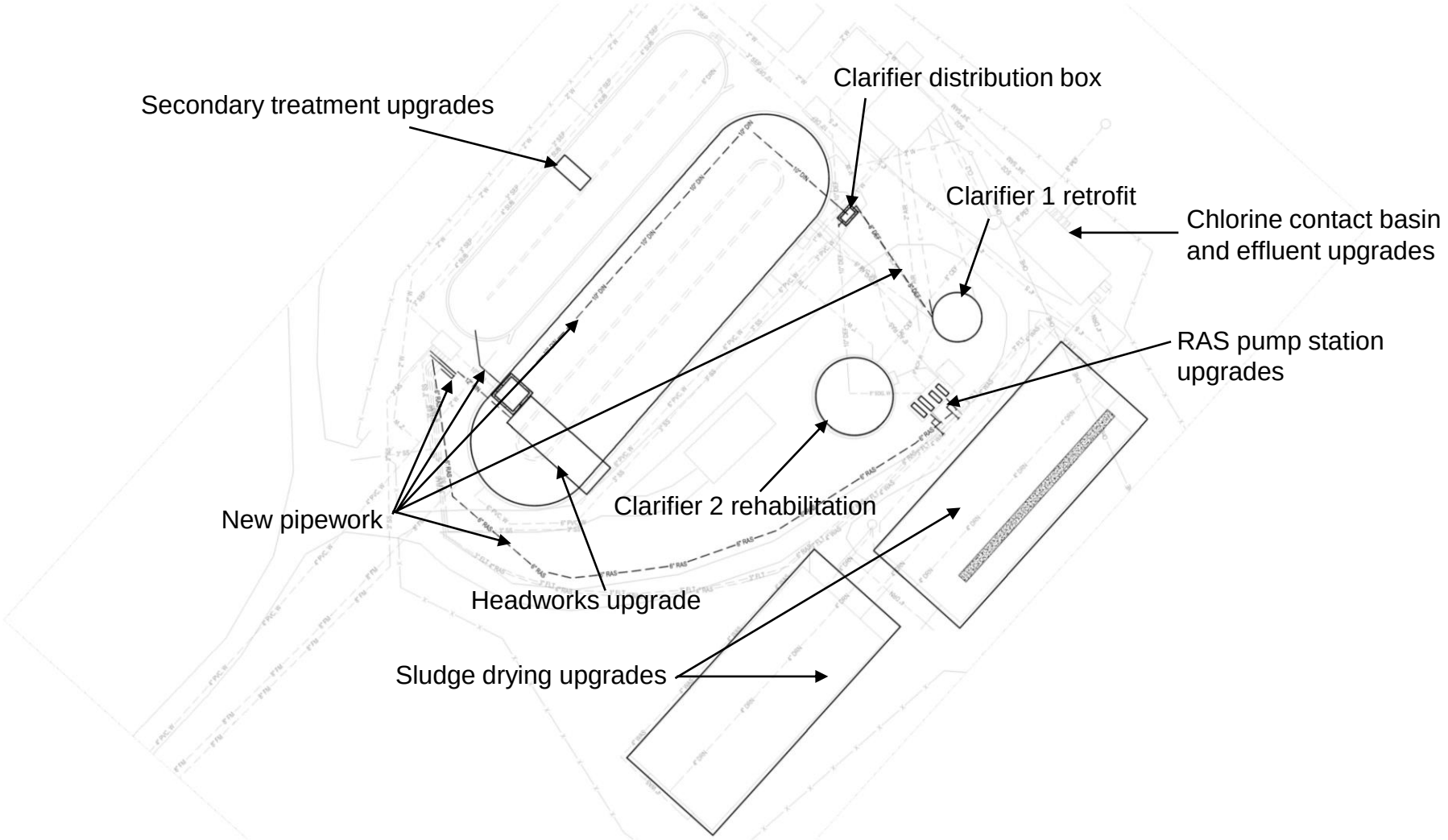

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Redway Community Service District
Wastewater System Infrastructure Improvement Project

Project No. 11214230
Revision No. -
Date Oct 13, 2022

WWTF Project Components

FIGURE 3-5

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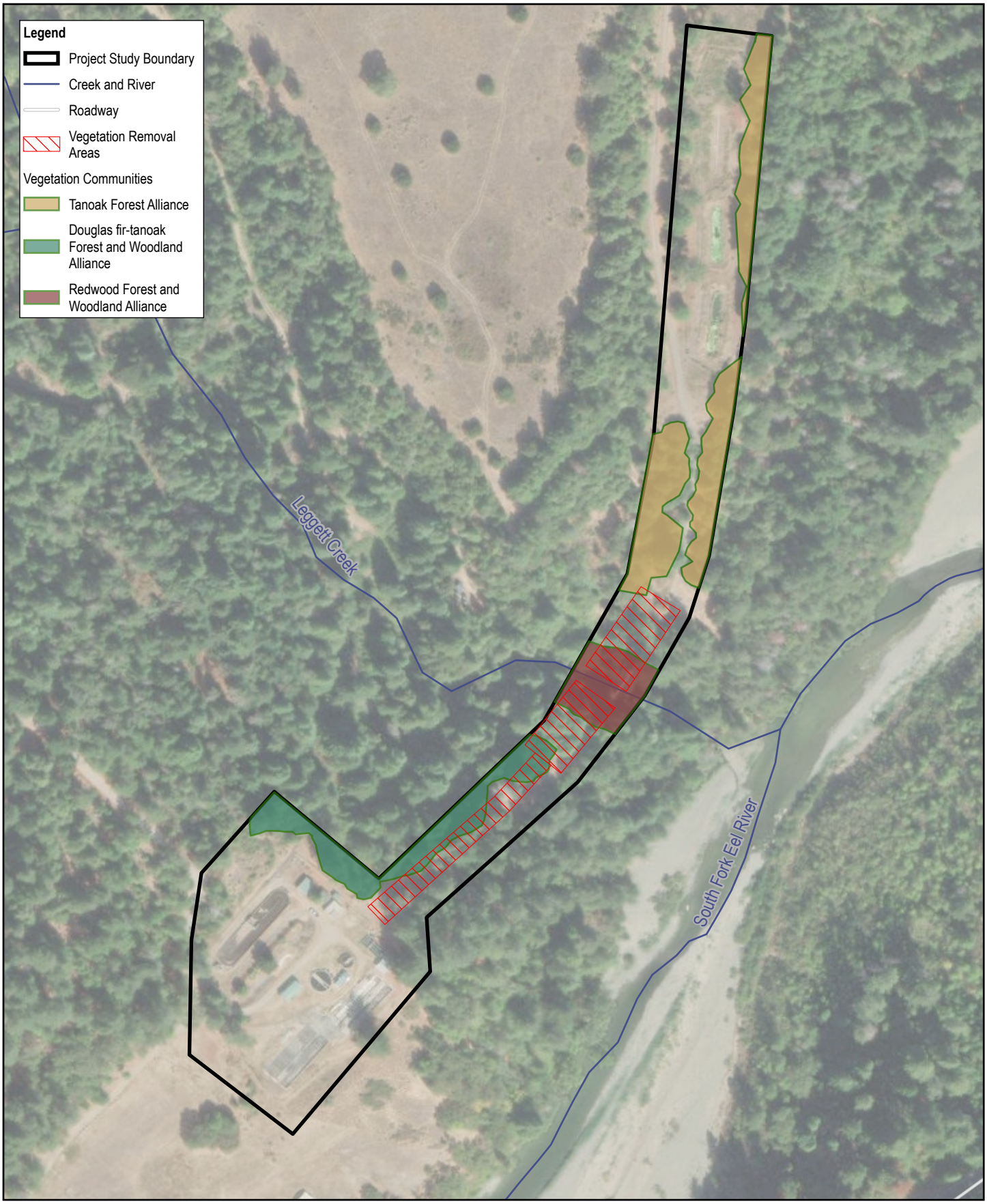

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GHD

Redway Community Services District Wastewater System Infrastructure Improvement Project

Vegetation Communities

Project No. **11214230**
Revision No. **-**
Date **Oct 12, 2022**

FIGURE 4

G:\561\11214230\GIS\Maps\Deliverables\11214230_ISMND.aprx - 11214230_1004_Vegetation
Print date: 12 Oct 2022 - 14:55

Data source: Vegetation, GHD, July 2022 ; PSB, GHD, 9/22/2022; Veg removal areas, 10/11/2022;World Imagery: Maxar, Microsoft. Created by: jclark2

Appendix B

CalEEMod Air Quality Emissions

RCSD WW Infrastructure Improvement Project - Humboldt County, Annual

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

RCSD WW Infrastructure Improvement Project

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction Analysis Only

Land Use - Existing WWTF and Collection System

Construction Phase - Assumed Construction Activity for Emissions Quantification

Off-road Equipment - Default Equipment and Activity

Off-road Equipment - Default Equipment and Activity

Grading - 380 CY Export assumes 50 percent soils excavated for effluent pipeline will be hauled off-site

Off-road Equipment - Graders and Rubber Tired Dozer activity decreased to 4 hrs/day. Trencher @ 6h/day added

Off-road Equipment - Default Equipment and Activity

Off-road Equipment - Default Equipment and Activity

Off-road Equipment - Default Equipment and Activity

Trips and VMT - Default Worker Trips and Hauling Trips. Vendor Trips increased for Grading and Building construction to reflect potential materials delivery

RCSD WW Infrastructure Improvement Project - Humboldt County, Annual

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

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	22.00
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	PhaseEndDate	5/17/2023	6/14/2023
tblConstructionPhase	PhaseEndDate	5/15/2023	5/26/2023
tblGrading	MaterialExported	0.00	380.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
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	0.0517	0.5160	0.5167	9.2000e-004	0.0455	0.0247	0.0702	0.0202	0.0228	0.0430	0.0000	80.9658	80.9658	0.0234	6.3000e-004	81.7376
Maximum	**0.0517**	**0.5160**	**0.5167**	**9.2000e-004**	**0.0455**	**0.0247**	**0.0702**	**0.0202**	**0.0228**	**0.0430**	**0.0000**	**80.9658**	**80.9658**	**0.0234**	**6.3000e-004**	**81.7376**

RCSD WW Infrastructure Improvement Project - 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	Demolition	Demolition	5/1/2023	5/12/2023	5	10	Assumed 10 days Demolition Activities
2	Site Preparation	Site Preparation	5/13/2023	5/26/2023	5	10	Clearing and Grubbing of 0.8 Acre
3	Grading	Grading	5/16/2023	6/14/2023	5	22	Incl. Trenching for Effluent Pipeline. Assumed Rate of 100 ft/day
4	Building Construction	Building Construction	5/18/2023	10/4/2023	5	100	Assumed 100 working days for Structure Covers and 4 Lift Station
5	Paving	Paving	10/5/2023	10/11/2023	5	5	Assumed Repaving
6	Architectural Coating	Architectural Coating	10/12/2023	10/18/2023	5	5	Assumed 1 Month Coating/Sealing

Acres of Grading (Site Preparation Phase): 5

Acres of Grading (Grading Phase): 11

Acres of Paving: 0

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
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	4.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40

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

Grading	Rubber Tired Dozers	1	4.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Trenchers	1	6.00	78	0.50

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	2.00	48.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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

3.2 Demolition - 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	3.2300e-003	0.0289	0.0370	6.0000e-005		1.4100e-003	1.4100e-003		1.3500e-003	1.3500e-003	0.0000	5.2091	5.2091	9.5000e-004	0.0000	5.2328
Total	**3.2300e-003**	**0.0289**	**0.0370**	**6.0000e-005**		**1.4100e-003**	**1.4100e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**5.2091**	**5.2091**	**9.5000e-004**	**0.0000**	**5.2328**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.5000e-004	2.4100e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4974	0.4974	2.0000e-005	2.0000e-005	0.5033
Total	**3.5000e-004**	**2.5000e-004**	**2.4100e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.4974**	**0.4974**	**2.0000e-005**	**2.0000e-005**	**0.5033**

RCSD WW Infrastructure Improvement Project - Humboldt County, Annual

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

3.3 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					2.6500e-003	0.0000	2.6500e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6700e-003	0.0309	0.0196	5.0000e-005		1.1300e-003	1.1300e-003		1.0400e-003	1.0400e-003	0.0000	4.2748	4.2748	1.3800e-003	0.0000	4.3094
Total	**2.6700e-003**	**0.0309**	**0.0196**	**5.0000e-005**	**2.6500e-003**	**1.1300e-003**	**3.7800e-003**	**2.9000e-004**	**1.0400e-003**	**1.3300e-003**	**0.0000**	**4.2748**	**4.2748**	**1.3800e-003**	**0.0000**	**4.3094**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.3000e-004	1.2000e-003	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2487	0.2487	1.0000e-005	1.0000e-005	0.2517
Total	**1.8000e-004**	**1.3000e-004**	**1.2000e-003**	**0.0000**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2487**	**0.2487**	**1.0000e-005**	**1.0000e-005**	**0.2517**

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

3.4 Grading - 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					0.0390	0.0000	0.0390	0.0188	0.0000	0.0188	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1064	0.0694	1.4000e-004		5.1800e-003	5.1800e-003		4.7700e-003	4.7700e-003	0.0000	12.4183	12.4183	4.0200e-003	0.0000	12.5187
Total	**0.0102**	**0.1064**	**0.0694**	**1.4000e-004**	**0.0390**	**5.1800e-003**	**0.0442**	**0.0188**	**4.7700e-003**	**0.0236**	**0.0000**	**12.4183**	**12.4183**	**4.0200e-003**	**0.0000**	**12.5187**

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	7.0000e-005	4.1600e-003	6.9000e-004	1.0000e-005	4.0000e-004	4.0000e-005	4.3000e-004	1.1000e-004	3.0000e-005	1.4000e-004	0.0000	1.4172	1.4172	0.0000	2.2000e-004	1.4836
Vendor	4.0000e-005	1.1700e-003	3.7000e-004	0.0000	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4086	0.4086	0.0000	6.0000e-005	0.4260
Worker	7.7000e-004	5.6000e-004	5.3000e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0943	1.0943	4.0000e-005	4.0000e-005	1.1073
Total	**8.8000e-004**	**5.8900e-003**	**6.3600e-003**	**2.0000e-005**	**1.8500e-003**	**6.0000e-005**	**1.9000e-003**	**5.0000e-004**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**2.9202**	**2.9202**	**4.0000e-005**	**3.2000e-004**	**3.0170**

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

3.5 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	0.0316	0.3209	0.3549	5.7000e-004		0.0160	0.0160		0.0147	0.0147	0.0000	50.1042	50.1042	0.0162	0.0000	50.5093
Total	**0.0316**	**0.3209**	**0.3549**	**5.7000e-004**		**0.0160**	**0.0160**		**0.0147**	**0.0147**	**0.0000**	**50.1042**	**50.1042**	**0.0162**	**0.0000**	**50.5093**

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	1.9000e-004	5.3200e-003	1.6700e-003	2.0000e-005	5.8000e-004	3.0000e-005	6.2000e-004	1.7000e-004	3.0000e-005	2.0000e-004	0.0000	1.8574	1.8574	1.0000e-005	2.6000e-004	1.9363
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
Total	**1.9000e-004**	**5.3200e-003**	**1.6700e-003**	**2.0000e-005**	**5.8000e-004**	**3.0000e-005**	**6.2000e-004**	**1.7000e-004**	**3.0000e-005**	**2.0000e-004**	**0.0000**	**1.8574**	**1.8574**	**1.0000e-005**	**2.6000e-004**	**1.9363**

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

3.6 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	1.5300e-003	0.0138	0.0176	3.0000e-005		6.6000e-004	6.6000e-004		6.2000e-004	6.2000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5300e-003**	**0.0138**	**0.0176**	**3.0000e-005**		**6.6000e-004**	**6.6000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**2.3498**	**2.3498**	**6.8000e-004**	**0.0000**	**2.3669**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.3000e-004	2.1700e-003	0.0000	5.4000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4477	0.4477	2.0000e-005	2.0000e-005	0.4530
Total	**3.2000e-004**	**2.3000e-004**	**2.1700e-003**	**0.0000**	**5.4000e-004**	**0.0000**	**5.4000e-004**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4477**	**0.4477**	**2.0000e-005**	**2.0000e-005**	**0.4530**

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

3.7 Architectural Coating - 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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	3.2600e-003	4.5300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393
Total	**4.8000e-004**	**3.2600e-003**	**4.5300e-003**	**1.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6393**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Appendix C

Biological Resources Evaluation

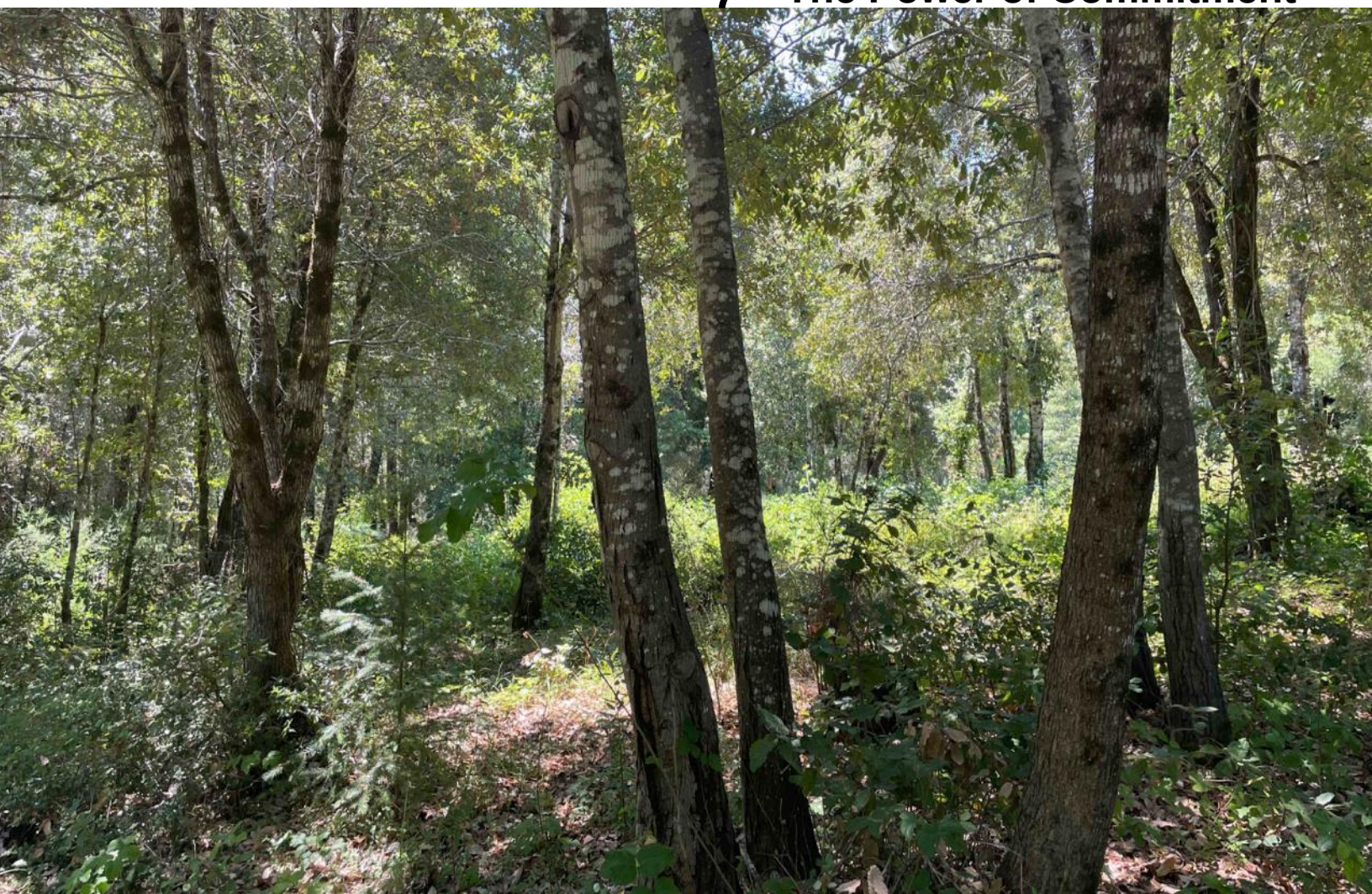
Biological Resources Evaluation

Redway Wastewater Infrastructure Improvement Project

Redway Community Services District

October 11, 2022

→ The Power of Commitment



Biological Resources Evaluation
Redway Wastewater Infrastructure Improvement Project

Redway Community Services District

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October 11, 2022

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List of Acronyms

AFS_TH	American Fisheries Society Threatened
AFS_VU	American Fisheries Society Vulnerable
BIOS	Biogeographic Information and Observation System
BLM_S	Bureau of Land Management Sensitive
BMP	Best Management Practice
BRE	Biological Resources Evaluation
CDF S	California Department of Forestry and Fire Protection Sensitive
CDFW	California Department of Fish and Wildlife
CDFW FP	CDFW Fully Protected Animal
CDFW WL	California Department of Fish and Wildlife Watch List
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	CNPS Rare Plant Ranking
CWA	Clean Water Act
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FD	Federally Delisted
FE	Federal Endangered
FGC	California Fish and Game Code
FT	Federal Threatened
GIS	Geographic Information Systems
HCP	Habitat Conservation Plan
HDD	Horizontal Directional Drilling
HDPE	High-density Polyethylene
IPaC	Information for Planning and Conservation
IUCN EN	International Union for Conservation of Nature Endangered
IUCN NT	International Union for Conservation of Nature Near Threatened
IUCN VU	International Union for Conservation of Nature Vulnerable
MBPA	Migratory Bird Protection Act
MBTA	Migratory Bird Treaty Act
NABCI RWL	North American Bird Conservation Initiative Red Watch List
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NMFS SC	National Marine Fisheries Service Species of Concern
NOAA	National Oceanic and Atmospheric Administration

NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	Ordinary High Water Mark
PSB	Project Study Boundary
RCSD	Redway Community Services District
RWQCB	Regional Water Quality Board
SC	State Candidate for listing
SE	State Endangered
SF Eel River	South Fork Eel River
SNC	Sensitive Natural Community
SR	State Rare
SSC	Species of Special Concern
ST	State Threatened
SCADA	Supervisory Control and Data Acquisition
USACE	U.S. Army Corps of Engineers
USFS S	U.S. Forest Service Sensitive
USFWS	U.S. Fish and Wildlife Service
USFWS BCC	U.S. Fish and Wildlife Service Birds of Conservation Concern
USGS	U.S. Geological Survey
WWTF	Wastewater Treatment Facility
WBWG H	Western Bat Working Group High Priority
WBWG LM	Western Bat Working Group Low Priority
WBWG M	Western Bat Working Group Medium Priority
WRCB	Water Resources Control Board
XERCES IM	Xerces Society Imperiled

1. Introduction

1.1 Purpose of this Report

The purpose of this Biological Resources Evaluation (BRE) is to investigate and determine which sensitive biological resources (if any), including plant and wildlife species and their habitats, may occur in the footprint or vicinity of the Redway Community Services District (RCSD) Wastewater Infrastructure Improvement Project (hereafter "Project," described below) and address any potential effects of the Project on these sensitive biological resources. The BRE is designed to provide supporting biological information specific to the California Environmental Quality Act (CEQA) and Endangered Species Act (ESA).

2. Project Description

The Project includes improvements to the wastewater collection and treatment systems, particularly including the electronic communication and technology improvements at the lift stations, infrastructure improvements at the wastewater treatment facility (WWTF), and replacement of the effluent pipeline over Leggett Creek between the WWTF and percolation ponds.

2.1 Project Background

The RCSD has secured grant funding for the planning and design of improvements to the wastewater treatment and collection system infrastructure, which is more than 50 years old. Years of active service have resulted in system wear despite ongoing maintenance. Many components of the system are at the end of their useful lives and are at risk of failure. The overall system has also become labor intensive to operate and maintain, and there is limited ability to automate controls and alarms. These characteristics are common to older, smaller service districts, which can benefit from targeted engineering evaluation and upgrades to meet system needs and operate more effectively in the future.

The purpose of the Project is to rehabilitate and replace aging infrastructure at the WWTF to provide better reliability and increase wastewater treatment capacity to provide sufficient treatment capacity during wet weather events. The Project is also improving lift station operations by installing equipment to support maintenance activities, replacing aging pumps and installing communications and monitoring equipment to provide automation and remote monitoring.

2.2 Project Location

The RCSD is located in southern Humboldt County, California, roughly 200 miles north of San Francisco and 66 miles south of Eureka. The Project Area is located directly adjacent to the South Fork Eel River (SF Eel River), see **Appendix A, Figure 1**. RCSD maintains and operates a sanitary sewer collection system and a WWTF. See **Appendix A, Figure 2** for components of the collection system and the location of the WWTF.

The RCSD is bordered by the SF Eel River to the south, west and north. To the east, the community of Redway is bordered by dense forest and mountains. Redway consists primarily of rural residential neighborhoods, with a small commercial district along the main traffic corridor of Redwood Drive, and another east of Evergreen Road. Redway is nearly built out at capacity, with limited urban expansion areas planned for the future (Humboldt County 2022).

The U.S. Census Bureau estimates the 2019 population of Redway at 1,358. The estimated population data for Redway demonstrates an annual growth rate of 2.34% since 2010 based on Census data from 2010 through

2019. The population of Redway is expected to grow to approximately 2,615 people by 2050, if the area continues at 2.34% annual growth. This population projection is likely an overestimate given that Redway is mostly built out and no major employers exist within the area to drive population growth.

2.3 Existing System

- **Collection System.** The RCSD operates an existing wastewater collection system and WWTF. The wastewater collection system is comprised of roughly 10 miles of gravity main piping and three miles of force main piping, ranging in size from 6 inches to 10 inches in diameter. Additionally, RCSD maintains five lift stations which serve distinctive wastewater collection zones, or sewer sheds: Dogwood, Azalea, West Coast, Mill St. and Evergreen lift stations (see **Appendix A, Figure 2)**. Two other lift stations pump directly to the WWTF, and adjacent YMCA campground and Eel River Conservation Camp, however these other lift stations are privately owned and operated and were not evaluated as part of this Project.
- **Wastewater Treatment Facility.** The treatment process is divided between liquids and solids treatment. For liquids treatment, RCSD utilizes an oxidation ditch with a surface aerator, a secondary clarifier, chlorine disinfection in a contact basin, prior to pumping to percolation ponds (described below). There is also a direct overflow to Eel River (Discharge Point 1), the effluent is dechlorinated with sulfur dioxide in the event of a direct overflow to the river. No modifications to infrastructure or schedule of use are proposed for Discharge Point 1 under the Project. Solids treatment includes an aerobic digester, sludge drying beds and a filtrate well to pump return liquid that drains through the drying beds.
- **Wastewater Treatment Facility Effluent.** RCSD currently has two approved discharges points: SF Eel River (Discharge Point 1) and the upland percolation ponds (Discharge Point 2). An approximate 1,600-foot, 4-inch diameter effluent pipeline conveys effluent from the WWTF to the two percolation ponds located approximately 1,600 feet northeast of the WWTF. The effluent pipe is located underground between the WWTF and the percolation ponds with the exception of the crossing over Leggett Creek, which is a perennial tributary that flows into the SF Eel River. Leggett Creek is located within a deep canyon. The effluent pipe surfaces on the south and north sides of the Leggett Creek canyon, and is visible (i.e., spans the canyon within a rustic bridge structure) for approximately 300 feet, and approximately 50 feet above Leggett Creek.

2.4 Proposed Project Components

Improvements are proposed to the following components of the RCSD lift stations, WWTF and effluent pipe location (see **Appendix A, Figure 3-1 to 3-5** for the latest Project designs, and **Table 2-1** for depth ranges of excavation).

Wastewater Collection System and Lift Stations

Various wastewater collection system improvements are proposed, which would occur at the five lift stations (see **Figures 3-2** through **3-4**). The improvements include:

- **Improved Flow Monitoring.** Installation of flow monitoring, level sensing and remote adjustment equipment, telemetry upgrades, and supervisory control and data acquisition (SCADA) technology integration. These improvements would be completed at the Azalea, Dogwood, Evergreen, Mill St. and West Coast lift stations.
- **Maintenance Improvements.** Installation of new pump stationary mounts at Azalea, Evergreen, Mill St. and West Coast lift stations. The pump stationary mounts would enable RCSD to utilize a portable Davit crane (or similar) to lift pumps out of each of the wet wells.
- **Pump Replacement & Improvements.** Installation of quick disconnect capability and rails to the existing wet well to enable safer/more efficient maintenance of the pumps and replacement of existing pumps at West Coast lift station with new submersible pumps.

Wastewater Treatment and Disposal System Infrastructure

Improvements are proposed at the WWTF to provide capacity for peak wet weather inflows and provide sufficient treatment to meet effluent quality requirements. See **Appendix A, Figures 3-1** and **3-5** for the locations of the proposed improvements, which include:

- **Headworks upgrade.** Demolition of existing headworks and installation of a new packaged headworks inlet system to provide screening and grit removal.
- **Secondary treatment upgrades.** Replacement of the existing brush aerator and installation of a redundant temporary aerator to be used in the instance that the brush aerator fails.
- **Clarifier 1 retrofit.** Convert the existing aerobic digester (formerly called Clarifier 1) back to a clarifier by installation of a clarifier influent well, rake, scum box, scum skimmer, weir plates and RAS pumps.
- **Clarifier 2 rehabilitation.** Replacement of the clarifier influent well, rake, scum box, scum skimmer, weir plates and upgraded RAS pumps for Clarifier 2.
- **Clarifier distribution box.** New clarifier distribution box to distribute flows proportionally to clarifiers 1 and 2.
- **Chlorine contact basin and effluent upgrades.** Expansion of the existing chlorine contact basin with a pump well to improve effluent handling. Replacement of the existing effluent pumps with larger pumps.
- **Sludge drying upgrades.** Installation of new greenhouse structures above the existing sludge drying beds.
- **General improvements.** Installation of interconnecting pipework between the proposed infrastructure at the WWTF, as mentioned above. Rehabilitation or upgrade of electrical systems associated with the various upgrades, including a potential replacement transformer. SCADA improvements are proposed at the WWTF and lift stations, and integration into the existing SCADA system.

WWTF Effluent Pipeline

The existing 4-inch effluent pipeline that transports treated effluent from the WWTF to the percolation ponds (Discharge Point 2) would be replaced with an 8-inch pipeline. Initially, the proposed pipeline would be constructed adjacent to the existing pipeline to enable continued service of the WWTF, however, following activation of the proposed effluent pipeline, the above ground portion of the existing pipeline would be deactivated and removed (the subsurface portion of the effluent pipe may be abandoned in place). Additional upgrades or rehabilitation of the effluent pipeline structure/bridge across the Leggett Creek canyon, including but not limited to stabilization of the northern and southern pipe daylighting points to secure the integrity of the cliffside, modifications of the slope of the pipeline, and structural improvements would occur as needed.

Table 2-1 Excavation Range per Project Component

Project Component	Range of Excavation Depth
Lift station upgrades	Up to 2 feet
Headworks upgrade	Existing wastewater structure to be demolished and new headworks to be built on top of new fill. Influent pipes may be excavated for connection up to 5 feet.
Secondary treatment upgrades	Up to 2 feet
Clarifier 1 retrofit	Up to 5 feet
Clarifier 2 rehabilitation	N/A
Chlorine contact basin and effluent pump station upgrade	Up to 12 feet
Sludge drying upgrades	Up to 2 feet
Pipe placement ("General Improvements"	Up to 5 feet
Effluent pipe replacement	3-6 feet

2.5 Construction Activities

Construction activities for this Project range from the installation of electrical equipment onto existing infrastructure (and thus no earth work), to excavation for new below ground structures.

Lift Stations

In general, the proposed improvements at the lift stations would be confined to within the footprint of each lift station and would not require disturbance outside of previously disturbed area (i.e., areas with concrete). Rather proposed construction activities at these locations would include the installation of electrical communications technology, the removal of and replacement of infrastructure to occur at the surface level, and minor excavation (less than two feet depth). Staging for construction at the lift stations would occur either within the lift station footprint(s) or in previously disturbed area(s) outside of the lift station footprint, such as a nearby parking lot or road shoulder.

Wastewater Treatment and Disposal Infrastructure

Construction for WWTF disposal system infrastructure would occur within the existing WWTF footprint, and would not occur outside of the areas shown on **Figure 3-1** in **Appendix A**. Construction activities would consist of demolition of existing facilities (headworks and oxidation ditch aerator), site grading, excavation for structural pads/foundations and new treatment facilities, installation of new pads, treatment facilities, water retaining structures, tanks, pipelines and pumps within the existing footprint of the WWTF. Excavation is not expected to exceed 20 feet below the surface and would be limited to occur within the boundaries shown in **Appendix A, Figures 3-1 to 3-5**.

WWTF Effluent Pipeline

The effluent pipeline would be approximately 1,600 linear feet, 8-inches in diameter and would be constructed adjacent to the existing effluent pipeline alignment which occurs over Leggett Creek. Construction activities would necessitate the clearing of vegetation adjacent to where the effluent pipeline surfaces on the north and south sides of the Leggett Creek canyon and along the access road between the WWTF and the Leggett Creek

canyon and percolation ponds, amounting to up to approximately 0.91 acres of woody vegetation to be potentially removed including Douglas-fir (*Pseudotsuga menziesii)*, tanoak (*Notholithocarpus densiflorus*), redwood (*Sequoia sempervirens*), and understory shrubs. This vegetation is located at the top of the Leggett Creek canyon, and no vegetation along the banks of Leggett Creek (i.e., riparian vegetation) is proposed for removal. All vegetation to be removed would be along the outskirts of the existing access road (which is already cleared of vegetation) and which is located at least approximately 225 feet from the SF Eel River and approximately 50 feet above Leggett Creek. **This value should be considered a maximum impact, it is likely that far less acreage of woody vegetation would need to be removed to enable construction.** Up to 1,600 feet of pipeline trench would be excavated (assuming an approximate four-foot width and three to five foot depth) between the WWTF and Leggett Creek canyon and between the Leggett Creek canyon and percolation ponds. Alternatively, some or all of the replacement effluent pipeline may be installed via horizontal directional drilling (HDD).

Under this scenario, high-density polyethylene (HDPE) pipe would be welded together and placed in a designated pipe lay-down area. Small entry and exit pits (approximately 2 feet deep, 2 feet wide, and 5 feet long) would be excavated. A grinder would be used to grind out the section to be paved, and the spoils from this activity would be hauled offsite. A drill rig would be set up, a pilot bore would be drilled, and the pilot hole would then be reamed out to size by completing multiple passes with a cutting head. After the hole is reamed, the HDPE pipe would be pulled through. After the collection system piping is installed and trenches are backfilled, paving would occur over the areas of paving that have been removed from excavation. A paver would be used to pave the trench section, and rollers would be used to compact the pavement that is placed.

Construction Equipment and Staging

A variety of construction equipment would be used to build the Project. This would include excavators, drill rigs, backhoes, front end loaders, crane, scrapers, graders, concrete saws, hammer excavator attachments, vibratory driver, winches, chainsaws, forklifts, rollers, asphalt road pavers, tractors, compactors, air compressors, chippers, hydromulcher, generator sets, and pneumatic tools. A variety of trucks including concrete mixers with the capacity to pour, haul trucks, dump trucks, and water trucks would also be required. Site preparation, including demolition, clearing and grading of the Project Area as necessary would require the removal and off-haul of materials. This would include, but not necessarily be limited to, vegetation, concrete, asphalt and fill, and existing utilities.

Staging would occur within the WWTF footprint, lift station footprints or within a previous disturbed off-site area, such as a parking lot or fallow grassy area.

Construction Schedule

Construction would likely occur within a single construction season, however, may require two construction seasons. Each construction season would last for approximately six to eight months. It's anticipated that Project construction would occur during the dry season in either 2024 and/or 2025. Construction activities would be limited to daytime work hours between 7:00 a.m. to 7:00 p.m., Monday through Friday with occasional work on Saturdays. If feasible, vegetation clearing would occur outside of the nesting bird season which is assumed to occur between March 15 to August 15, and thus vegetation removal would occur if feasible after August 15 and/or before March 15.

2.6 Operation and Maintenance

The RCSD would maintain and operate the Project under normal, existing operations and schedule. Once construction is complete, general operation and maintenance activities associated with the proposed Project would include routine testing of equipment and the SCADA system, annual inspections, testing, repairs and servicing of equipment, and other similar operational requirements similar to what is occurring currently.

Operation and maintenance of the Project would not generate additional vehicle trips, above existing conditions. The RCSD would be responsible for all maintenance. Project operation and maintenance would be consistent with existing maintenance procedures and schedule.

2.7 Definition of the Project Study Boundary

For the purposes of this BRE, the Project Study Boundary (PSB) includes the Project site, construction areas, staging areas and access roads. The PSB is synonymous with all areas of proposed ground disturbance for the Project. For biological analysis purposes, a 500-foot buffer area was created outside of the PSB known as the Biological Study Area (BSA). Field surveys occurred within the PSB, and desktop review of aerial imagery and views of the BSA via binoculars were completed within the BSA. For the purposes of this BRE, the BSA is equivalent to the Action Area. Different terminology referencing the same study area extent is related to regulatory requirements (i.e., “Action Area” is the study area terminology for the purpose of an ESA analysis, and “PSB” and “BSA” is the study area terminology for a non-ESA analysis). State special status species with no federal status were evaluated at the level of the PSB, and federally listed species were evaluated at the level of the Action Area/BSA. The PSB and Action Area/BSA are shown in **Appendix A, Figure 4**.

2.8 Definition of the Federal Endangered Species Act Action Area

The Action Area serves as the “study area” for the purposes of a federal ESA Section 7 Biological Assessment. The Action Area includes the PSB, as defined in Section 2.7, buffered by an area of 500 feet (and is therefore equivalent to the BSA). Federally listed species were evaluated at the level of the Action Area. This large buffer around the Project Area is designed to account for any construction-related auditory and visual disturbance to wildlife in the vicinity, vegetation clearing, and other potential impacts such as increased dust or sediment releases.

3. Regulatory Background

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

3.1 Federal Jurisdiction

3.1.1 National Environmental Policy Act

The National Environmental Policy Act 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).

3.1.2 Endangered Species Act

The ESA of 1973 (16 United States Code [USC] 1531 et seq.) establishes a national policy that all federal departments and agencies provide for the conservation of threatened and endangered species and their

ecosystems. The Secretary of the Interior and the Secretary of Commerce are designated in the ESA as responsible for: (1) maintaining a list of species likely to become endangered within the foreseeable future throughout all or a significant portion of its range (threatened) and that are currently in danger of extinction throughout all or a significant portion of its range (endangered); (2) carrying out programs for the conservation of these species; and (3) rendering opinions regarding the impact of proposed federal actions on listed species. The ESA also outlines what constitutes unlawful taking, importation, sale, and possession of listed species and specifies civil and criminal penalties for unlawful activities.

Pursuant to the requirements of the ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed or proposed species may be present in the project region, and whether the proposed project would result in a "take" of such species. The ESA prohibits "take" of a single threatened and endangered species except under certain circumstances and only with authorization from the USFWS or the National Oceanic and Atmospheric Administration (NOAA) Fisheries through a permit under Section 7 (for federal entities or federal actions) or 10(a) (for non-federal entities) of the Act. "Take" under the ESA includes activities such as "harass, harm, pursue, hunt shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS regulations define harm to include "significant habitat modification or degradation." On June 29, 1995, a U.S. Supreme Court ruling further defined harm to include habitat modification "…where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."

In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the ESA or result in the destruction or adverse modification of critical habitat for such species (16 USC 1536[3][4]). If it is determined that a project may result in the "take" of a federally listed species, consultation would be required under Section 7 or Section 10 of the ESA.

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 (HCPs)

Conservation plans 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 Action Area/BSA do not overlap any existing active or proposed HCPs according to a current list from the United States Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS) website (USFWS 2022a), National Marine Fisheries Service (NMFS) West Coast HCPs (NOAA Fisheries 2022), and the California Department of Fish and Wildlife (CDFW) list of HCPs and Natural Community Conservation Planning (NCCP)s (CDFW 2022a).

3.1.3 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.

3.1.4 Migratory Bird Treaty Act (MBTA)

The MBTA of 1918 (16 U.S.C. 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.

3.1.5 Clean Water Act (CWA)

The CWA (1977, as amended) establishes the basic structure for regulating discharges of pollutants into waters of the U.S. It gives the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs, including setting wastewater standards for industry and water quality standards for contaminants in surface waters. The CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, without a permit under its provisions. The U.S. Army Corps of Engineers regulated fill and excavation in U.S. waters and wetlands

No Project work would occur in waters of the U.S. waters therefore the CWA does not apply to this Project.

3.1.6 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.

3.2 State Jurisdiction

3.2.1 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.

3.2.2 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 (WRCB). The State Board is the statewide authority that oversees nine separate Regional Water Quality Control Boards (RWQCB) 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. On April 2, 2019, the California State WRCB adopted new definitions and procedures for discharges of dredged or fill material to Waters of the State.

No Project work would occur in waters of the state, including riparian, therefore the Porter-Cologne Water Quality Act does not apply to this Project.

3.2.3 California Endangered Species Act (CESA)

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.”

3.2.4 Other State Special Status Species and Communities

The CDFW maintains a list of Species of Special 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, USFWS Birds of Conservation Concern, and CDFW Special Status Invertebrates are considered special status species by CDFW.

3.2.5 Sensitive Natural Communities

CDFW provides oversight of habitats (i.e., plant communities) listed as Sensitive in the California Natural Diversity Database (CNDDB) and on the California Sensitive Natural Communities (SNC) List, based on global and state rarity rankings. The natural communities are broken down to alliance and association levels for vegetation types affiliated with ecological sections in California. The alliances on the California SNC List coincide with A Manual of California Vegetation (Sawyer et al. 2009). CDFW considers alliances and associations with a state rank of S1 to S3 to be Sensitive. The application of ranking for determination of Sensitive Communities is summarized as follows in **Table 3-1** (NatureServe 2022).

Table 3-1 NatureServe Conservation Status Ranks

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

3.2.6 California Fish and Game Code (FGC)

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 NMFS, as appropriate), and environmental organizations. The purpose of NCCPs are 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.

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

Native Plant Protection Act (NPPA)

The CDFW administers the NPPA (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 Fish and Game Code and CDFW has oversite 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 64 plant species designated as "rare" 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 State Endangered (SE), State Threatened (ST), State Rare (SR), or State Candidate for listing (SC). 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 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 U.S.C. 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 Newson 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.

3.3 Local Jurisdiction

Redway is a census designated place within Humboldt County, and therefore adheres to Humboldt County regulations. The proposed excavations and grading associated with the Project are for utilities, and therefore the Project would be exempt from requiring a grading permit (see Section 331-12.D.2 of Humboldt County Title III Land Use and Development Code). Standard construction best management practices (BMPs) would be used during Project construction.

Portions of the PSB is within designated Streamside Management Areas (SMA)s including: Evergreen lift station within the Bluff Creek SMA, Azalea lift station within the SF Eel River SMA and the effluent pipe is within the both the Leggett Creek and SF Eel River SMA.

Humboldt County Code Section 314-61 – Streamside Management Areas and Wetlands Ordinance

Section 61.1.2 Purpose

The purpose of this section is to provide minimum standards pertaining to the use and development of land located within Streamside Management Areas, wetlands and other wet areas such as: natural ponds, springs, vernal pools, marshes, and wet meadows.

The purpose of establishing the standards is to:

- *Create a Streamside Management Areas and Wetlands ordinance within the zoning regulations of the County of Humboldt pursuant to the mandates of state law.*
- *Implement portions of the County’s General Plan policies and standards pertaining to open space, conservation, housing, water resources, biological resources, and public facilities.*

3.3.1 Humboldt County General Plan

The policies within the Humboldt County General Plan that regulate biological resources and are relevant to this Project include the following:

BR-P2. Critical Habitat

Discretionary projects that have the potential to impact critical habitat designated under the federal ESA shall be conditioned to avoid significant habitat modification or destruction consistent with federally adopted Habitat Recovery Plans or interim recovery strategies.

4. Baseline Conditions

4.1 General Environmental Baseline within the PSB and Action Area

The Project is located in the community of Redway in Humboldt County, California. Project activities will occur largely in areas of hardscape, existing development, and disturbed areas. However, there are portions of forested habitat present. The Action Area/BSA is classified as a mixture of land cover types, including herbaceous, shrub/scrub, deciduous forest, evergreen forest, mixed forest, open water, and low to medium development intensity (USGS 2019). The pump stations are generally in more developed areas, while the section of the PSB that extends from the WWTF and across Leggett Creek is more forested. However, there is forested habitat surrounding the pump stations as well. See **Appendix B** for Site Visit Photos of the PSB.

The potential for sensitive biological resources to occur was investigated during the aquatic resources delineation, rare plant, wildlife, and SNC surveys (See Sections 6.1-6.5).

4.2 Topography and Soils

The elevation of the PSB and Action Area/BSA is between 300 to 475 feet above sea level. Soils include Water and Fluvents, 0 to 2 percent slopes; Conklin, 0 to 2 percent slopes; Grizzlycreek-Chaddcreek complex, 2 to 9 percent slopes; Gschwend-Frenchman complex, 0 to 9 percent slopes; Gibsoncreek-Seelycreek complex, 5 to 30 percent slopes; Seelycreek-Madturkey-Gibsoncreek complex, 30 to 50 percent slopes; and, Urban land-Garberville complex, 5 to 15 percent slopes (see **Appendix A, Figures 5-1 through 5-4)**. All of these soils contain numerous horizons composed of silty loam, loam, sandy loam or gravelly sandy loam, and the depth to the restrictive layer is at least 80 inches for all soil types. All soils are considered to be “well drained.” See **Appendix C** for the NRCS Custom Soil Resource Report.

4.3 Habitat Elements

In the more continuous section of the PSB that extends from the WWTF and across Leggett Creek, there is coniferous, deciduous, and hardwood forest habitat. This includes species such as coast redwood (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga menziesii*), tanoak (*Notholithocarpus densiflorus var. densiflorus*), Bigleaf maple (*Acer macrophyllum*), Pacific madrone (*Arbutus menziesii*), California bay (*Umbellularia californica*), with lesser amounts of true oak species (*Quercus sp.*), as well as red alder (*Alnus rubra*). The area adjacent to the SF Eel River contains small amounts of riparian habitat—most of which is outside the PSB but within the Action Area/BSA—comprised of a well-established canopy of trees and understory cover. The BSA around pump stations is primarily surrounded by private residences, roadways, and riverine features. There are also mature coniferous trees surrounding the pump stations.

The PSB and Action Area/BSA is not expected to contain high amounts of suitable habitat due to proximity to human development and edge effects. However, the riparian, mature forest, and aquatic habitat available within the BSA are suitable features to support various wildlife species, including sensitive species.

4.4 Hydrology and Climate

The SF Eel River, Leggett Creek, Bluff Creek, and three unnamed riverine features are noted on the USFWS National Wetlands Inventory (NWI) mapper within the Action Area/BSA (USFWS 2022b**, Appendix A, Figures 6-1 through 6-4)**. Three of the proposed pump stations adjoin or are directly adjacent to these features (**Appendix A, Figure 2**). Leggett Creek directly bisects the northern portion of the Project Area.

The climate in Redway is characterized by cool, wet winters and warm, dry summers. Precipitation primarily falls in the form of rain, with the highest average amounts being from October to May. Annual rainfall averages

63 inches per year. Air temperatures vary with winter/summer highs from the lower 50s (degrees Fahrenheit [°F]) to the high 80s, respectively.

4.5 Habitat Access, Connectivity, and Migratory Corridors

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

No "Essential Connectivity Areas" have been identified within the PSB, and the nearest is approximately 6 miles south, 8 miles north, and 12 miles west (CDFW 2022b). The PSB is not located within or near a "Natural Landscape Block" identified in the California Essential Habitat Connectivity Project. The nearest natural landscape block is located approximately 8 miles north of the PSB (CDFW 2022b). There is "Natural Areas Small" surrounding the town of Redway, including small portions of the PSB.

The PSB and Action Area/BSA are located within the Pacific Flyway for migratory birds. Areas of high-quality natural habitat exist that would support high levels of migratory species stopover use, breeding, or wintering specifically within the Project Area. There is suitable nesting habitat within the largest section of the PSB adjacent to the WWTF, and immediately adjacent to the PSB in riparian habitat along the SF Eel River.

Leggett Creek, which crosses over the PSB and connects to the SF Eel River, is known aquatic habitat for fish species, including Southern Oregon / Northern California (SONCC) Coho Salmon Evolutionary Significant Unit (ESU; *Oncorhynchus kisutch*, pop. 2) and Summer-run Steelhead Trout (*Oncorhynchus mykiss irideus*, pop. 36; CDFW 2007). SONCC Coho Salmon ESU are federally threatened, state threatened, and considered threatened by the American Fisheries Society. Young of the year Coho Salmon were detected in Leggett Creek in 2007 (CDFW 2007). Summer-Run Steelhead Trout are a state endangered candidate and a SSC by CDFW, and were detected in Leggett Creek in 2007 (CDFW 2007). However, no in water work is to occur that would impede migration of native or migratory fish.

The forested section within the northern PSB and the Action Area/BSA may contain suitable denning, nesting, and foraging habitat features for various species including (but not limited to) rodents, mustelids, bats, and birds. There are small sections of riparian habitat in the Action Area/BSA (near Leggett Creek and the SF Eel River) that may also be suitable for species such as birds, bats, amphibians, reptiles, and fish. However, no work is proposed to occur in the PSB or Action Area/BSA with suitable forested habitat that extends to riparian habitat near the SF Eel River. All vegetation to be removed would be along the outskirts of the existing access road (which is already cleared of vegetation) and which is located at least approximately 225 feet from the SF Eel River and approximately 50 feet above Leggett Creek. No trees immediately adjacent to Leggett Creek would be removed. The amount of habitat fragmentation surrounding the five proposed pump stations is not expected to be suitable for sensitive species. Overall, Project work is not expected to cause any new barriers to terrestrial wildlife movement or interfere with the migration of birds, bats, or other species.

5. Methods

5.1 Project Area, Project Study Boundary, and Action Area/BSA

Investigations were conducted at various spatial scales to meet the requirements of both CEQA and Section 7 of the ESA. For federally listed species, the Project was evaluated at the level of the Action Area/BSA. For

state special status wildlife species, rare plants, and SNCs, the Project was evaluated at the level of the PSB (as defined in Section 2.7).

5.2 Preliminary Investigation

5.2.1 Database Searches (CNDDB, CNPS, EFH, and IpaC)

A database search for sensitive plant and SNCs that may occur in the Project vicinity was conducted by GHD on March 21, 2022. Database searches for sensitive wildlife species that may occur in the Project vicinity was conducted by GHD on June 27, 2022. Database search results are included in **Appendix D**.

Database searches included the CNDDB (CDFW 2022c), CNPS Inventory of Rare and Endangered Vascular Plants (CNPS 2022), Essential Fish Habitat (NOAA 2022b), and USFWS Information for Planning and Conservation (IpaC; USFWS 2022c). The CNDDB Rare Find database and mapping via the Biogeographic Information and Observation System (BIOS) were also consulted for further information on rare plant occurrences documented in the Project vicinity. A database search of the National Oceanic and Atmospheric Administration (NOAA) Fisheries West Coast Region California Species List Tools was not conducted, as it is no longer publicly available. Although this tool is not publicly available, listed species known to occur in the PSB or Action Area/BSA are considered in **Tables 6-1, 6-2 and 6-3**. Database searches encompassed the U.S. Geological Survey (USGS) quadrangle (quad) centered on majority of the PSB (Miranda) and the surrounding eight quads: Weott, Myers Flat, Blocksburg, Fort Seward, Harris, Garberville, Briceland, and Ettersburg.

5.2.2 National Wetlands Inventory (NWI)

A search of the USFWS NWI was conducted on June 22, 2022 for the immediate Project vicinity. The NWI map for the Project can be found in **Appendix A, Figures 6-1 to 6-4**.

5.3 Field Surveys

5.3.1 Special Status Plants

GHD botanists Christian Hernandez and Kolby Lundgren conducted seasonally appropriate floristic surveys for special status plants on May 17, 2022 and July 11, 2022 and evaluated the area for SNCs. The special status plant surveys followed *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018) and *General Rare Plant Survey Guidelines by the Endangered Species Recovery Program* (USFWS 2002). The PSB was systematically traversed on foot while searching for potential special status plants and cataloging all plant species encountered. Plants were identified to the lowest taxonomic level necessary for rare plant identification. Nomenclature follows *The Jepson Manual* (Baldwin et al 2012). Surveys were appropriately timed to identify potentially occurring special status species throughout the PSB.

5.3.2 Sensitive Natural Communities

Vegetation communities onsite were documented in the field and classified at the alliance level according to the *Manual of California Vegetation* (Sawyer et al. 2009) using the Rapid Assessment method. Christian Hernandez and Kolby Lundgren conducted Vegetation Assessments according to protocol on May 17, 2022 and July 11, 2022. Vegetation Rapid Assessments were conducted according to protocol (CDFW 2018, CDFW-CNPS 2019), and Vegetation Rapid Assessment forms (**Appendix E**) were used to characterize dominant vegetation and evaluate habitat quality. These Vegetation Rapid Assessments provided the basis for potential SNC designation. Vegetation communities were mapped using points collected in the field with an Eos Arrow

100 Submeter GPS Receiver with GNSS and an iPad running ArcGIS Collector software in the WGS84 datum. Vegetation community boundaries were then digitized with Geographic Information Systems (GIS) from aerial imagery based on field observations and visible vegetation signatures.

5.3.3 Aquatic Resources

The GHD wetland scientist team conducted the aquatic resource delineation on June 9, 2022. To define a wetland, the U.S. Army Corps of Engineers (USACE) requires that vegetation, soil, and hydrology (three-parameters) all show wetland attributes (USACE 1987; USACE 2010). The wetland delineation used USACE criteria from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0)* (USACE 2010). Wetland delineation methods consisted of digging pits to investigate soil profiles and collecting vegetation, hydrology, and soil data in potential wetland locations as indicated by observed hydrophytic vegetation or geomorphic position. See **Appendix A, Figures 7-1 and 7-2** for an overview of aquatic resources, as delineated by GHD wetland scientists.

5.3.4 Wildlife Reconnaissance Visit

A reconnaissance-level site visit was conducted by Sara Moriarty-Graves, GHD Wildlife Biologist (hereafter surveyor), on July 11, 2022, from 10:00 to 13:30. Weather during the survey included overcast to cloudy skies, about 95 degrees Fahrenheit, with light air to a light breeze (Beaufort scale 1-2).

Where property access and the habitat allowed the surveyor to walk without risk of damaging nests or dens and surrounding vegetation, the survey included a physical search of the PSB and Action Area/BSA (**Appendix A, Figure 4**). This included inspecting the ground, shrubs, culverts, holes, and trees for the presence of any wildlife species. Additionally, the bark of vegetation and the ground layer under vegetation were inspected for evidence of wildlife species, such as feathers, pellets, whitewash, scat, tracks, etc. Where the habitat was dense or otherwise impenetrable or inaccessible, observations were made from fixed locations. This reconnaissance-level survey was conducted to identify general wildlife resources and habitat as well as wildlife activity in the PSB and BSA. No protocol-level surveys for special status wildlife were conducted at this time.

5.3.5 Agency Coordination

An official species list of ESA-listed species within the Action Area/BSA was obtained from the USFWS (USFWS 2022c).

6. Results

6.1 Summary of General Biological Resources

The potential for special status plant species to occur was first evaluated by reviewing known species distributions and documented occurrences from CNDDB and CNPS and comparing the habitat associations of the species with potential habitat in the survey area based on aerial imagery and professional knowledge of vegetation types and ecology of the North Coast of California. The complete results of database scoping of special status species that have been detected within the 9-quad search area can be found in **Appendix D**. Seasonally appropriate floristic surveys for special status plants were completed in 2022. None of the plant species identified in the scoping process were detected within the PSB.

The potential for special status wildlife to occur was determined by: (1) reviewing the current distribution of each species and whether it overlapped with the PSB or Action Area/BSA; (2) reviewing the documented occurrence information from CNDDB and other information sources (including Bat Acoustic Monitoring Visualization Tool [BatAMVT] 2021, Bumble Bee Watch 2022, eBird 2022, iNaturalist 2022); (3) comparing the habitat associations of each species with habitat quality and conditions in and adjacent to the PSB, based on

existing information (e.g., elevation, aerial imagery) and the site visit; and (4) using professional judgment to evaluate habitat quality and the relevance of occurrence data, or the lack thereof. Species determinations are included in **Table 6-3**.

Based on these criteria, five state listed, federally listed (or both) have a moderate to high potential to occur within the Action Area/BSA: Northern Spotted Owl (*Strix occidentalis caurina*; federally threatened, state threatened), SONCC Coho Salmon ESU (federally threatened, state threatened), Chinook Salmon (*Oncorhynchus tshawytscha*; federally threatened), Summer-run Steelhead Trout (candidate state endangered), and Foothill Yellow-legged Frog (*Rana boylii*; state endangered). In addition, ten special status species have a moderate to high potential to occur (see **Section 6.5.4** for further details).

6.2 Special Status Plants

Special Status Plants

Table 6-1 summarizes the potential for special status plants documented in the 9-quad search area to occur within the PSB. This table was constructed by referencing combined CNDDB and CNPS 9-quad searches (Section 5.2.1) along with CNDDB spatial data in CDFW BIOS (CDFW 2022e). For the purpose of this report, CRPR 3 and 4 species were omitted from assessment in the Potential To Occur table because their potential to occur was thoroughly assessed during on-the-ground field surveys based on database scoping. All state listed species have been included in the database scoping results (**Appendix B**).

Table 6-1 Sensitive Plant Species with Potential to Occur within the Project Study Boundary

Scientific Name	Common Name	FESA	CESA	Global Rank[2]	State Rank[2]	CRPR[2]	Habitat Requirements[1]	Potential to Occur in the PSB
Astragalus agnicidus	Humboldt County milk-vetch	None	Endangered	G2	S2	1B.1	Broadleafed upland forest, North Coast coniferous forest	**Moderate Potential.** The nearest mapped records are over five miles away, but the PSB contains suitable habitat with exposed soils and disturbed openings in forested areas and along roadsides. This species is unlikely to occur within the Project Area, which is mostly thickly vegetated with grasses and shrubs.
Carex arcta	northern clustered sedge	None	None	G5	S1	2B.2	Bogs and fens, North Coast coniferous forest	**Low Potential.** There are North Coast coniferous forest in the PSB; however, they are dry, upland tanoak and Douglas fir forest. No areas of standing water or boggy soil within PSB to provide suitable habitat.
Erythronium oregonum	giant fawn lily	None	None	G5	S2	2B.2	Cismontane woodland, Meadows and seeps	**Low Potential.** Some woodland openings occur within the PSB, but no high-quality mesic or rocky habitats often associated with the species occur in the PSB.
Erythronium revolutum	coast fawn lily	None	None	G4G5	S3	2B.2	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	**Low Potential.** Some woodland openings occur within the PSB, but no high-quality mesic or rocky habitats often associated with the species occur in the PSB.
Gilia capitata ssp. pacifica	Pacific gilia	None	None	G5T3	S2	1B.2	Chaparral, Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	**Low Potential.** Some woodland openings occur within the PSB, but no high-quality mesic or rocky habitats often associated with the species occur in the PSB.
Howellia aquatilis	water howellia	Delisted	None	G3	S2	2B.2	Marshes and swamps	**Moderate Potential.** There are wastewater treatment ponds in the PSB; however, they are frequently disturbed.
Kopsiopsis hookeri	small groundcone	None	None	G4?	S1S2	2B.3	North Coast coniferous forest	**Moderate Potential.** The Project Area is adjacent to north coast coniferous forest with openings and Ericaceous species.
Montia howellii	Howell's montia	None	None	G3G4	S2	2B.2	Meadows and seeps, North Coast	**Moderate Potential.** The closest observation is five miles north of the WWTF. North Coast coniferous forest is in the PSB.

Scientific Name	Common Name	FESA	CESA	Global Rank[2]	State Rank[2]	CRPR[2]	Habitat Requirements[1]	Potential to Occur in the PSB
							coniferous forest, Vernal pools	
Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	G4T2	S2	1B.1	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	**Low Potential.** There are no nearby occurrences. There is suitable habitat in the PSB, but it is very marginal. Grassy areas of the PSB are frequently disturbed by mowing.
Packera bolanderi var. bolanderi	seacoast ragwort	None	None	G4T4	S2S3	2B.2	Coastal scrub, North Coast coniferous forest	**Moderate Potential.** There are marginal areas of habitat near Leggett Creek where the riparian slope becomes steep and rocky. No populations detected during surveys.
Piperia candida	white-flowered rein orchid	None	None	G3?	S3	1B.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	**High Potential.** There is suitable habitat for this species in the dry, upland tanoak/Douglas fir forest types of the PSB. This habitat is almost exclusively located at the WWTF.
Pleuropogon hooverianus	North Coast semaphore grass	None	Threatened	G2	S2	1B.1	Broadleafed upland forest, Meadows and seeps, North Coast coniferous forest	**Moderate Potential.** There are no meadows or seeps in the PSB, nor mesic openings or broadleafed upland forest.
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	None	None	G5T2	S2	1B.2	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	**Low Potential.** There are no nearby occurrences. There is no suitable habitat in the PSB. Grassy areas of the PSB are frequently disturbed by mowing.

Scientific Name	Common Name	FESA	CESA	Global Rank[2]	State Rank[2]	CRPR[2]	Habitat Requirements[1]	Potential to Occur in the PSB
Silene bolanderi	Bolander's catchfly	None	None	G2	S2	1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	**Low Potential.** There are no nearby occurrences. There is very marginal habitat in the PSB.
Tracyina rostrata	beaked tracyina	None	None	G2	S2	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland	**Moderate Potential.** This species can occur in grassland and shrub habitats like those in the PSB.
Viburnum ellipticum	oval-leaved viburnum	None	None	G4G5	S3?	2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	**Low Potential**. This species is typically associated with yellow pine forest. No nearby occurrences are known, and it is not likely to occur in the PSB.

Footnotes:

[1] General habitat, and microhabitat column information, reprinted from CNDDB (October 2021).
[2] Rankings from CNDDB (October 2021).

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 2022d); ? = " Denotes inexact numeric rank" (NatureServe 2021); Q = " Questionable taxonomy that may reduce conservation priority" (NatureServe 2022)

Scientific Name	Common Name	FESA	CESA	Global Rank[2]	State Rank[2]	CRPR[2]	Habitat Requirements[1]	Potential to Occur in the PSB

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 2022d).

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.

6.2.1 Rare Plant Surveys

No special status plant species were observed during floristic surveys of the study area. Seasonally appropriate surveys for special status plants have been completed, including an early season survey in mid-May, and a follow-up for later blooming plants in July 2022. Surveys were timed to observe potentially occurring special status species during the blooming period. The May 17 survey was appropriately timed to observe early blooming potentially occurring plants such as Howell's montia (*Montia howellii*), which is known to occur along ephemerally moist roadside habitats in coniferous forest and for which there are several known occurrences in nearby quads north of the PSB. The July survey was suitably timed to observe later blooming species such as white-flowered rein orchid (*Piperia candida*), seacoast ragwort (*Packera bolanderi* var. *bolanderi*), and Humboldt County milk-vetch (*Astragalus agnicidus)*, which may also occur in roadside habitats or within dry tanoak/Douglas fir forest types.

6.2.2 Federally listed Plant Species

No federally listed plant species that are regulated by the USFWS under the ESA were identified as being previously recorded within the vicinity of the PSB (i.e., within the Action Area/BSA).

6.2.3 California State Listed or Special Status Plant Species

One CESA listed plant was identified during scoping as previously recorded within the vicinity of the PSB: Humboldt County milk-vetch. The scoping query yielded 16 special status plant species with CRPR rank of 1 or 2 that are not federally listed. Of the List 1 or 2 species identified during scoping, seven (7) have a moderate probability of occurring within the study area, and one (1) has a high probability of occurring within the study area. All other rare plant species identified during scoping have low potential of occurring and are not discussed herein. Impacts to rare plant populations would be avoided as discussed further in Section 8.

6.3 Sensitive Natural Communities

Natural vegetation communities listed as Sensitive in the CNDDB and on the California SNC List are to be addressed within the CEQA review process (CDFW 2018). SNCs are classified at the Alliance level according to *A Manual of California Vegetation* (Sawyer et al. 2009). Communities were characterized using the Rapid Assessment method (see **Appendix E** for Vegetation Rapid Assessment Forms). CDFW considers alliances with a NatureServe State Rank of S1 to S3 to be Sensitive Natural Communities, and therefore these alliances are considered during the CEQA process (CDFW 2022g). No natural vegetation communities with a NatureServe State Rank of S1 to S3 were identified in database scoping. The PSB contains three (3) natural vegetation communities which are considered SNC with a NatureServe State Rank of S3. SNCs identified during surveys include: Douglas fir-tanoak forest and woodland alliance (S3), redwood forest and woodland alliance (S3.2), and tanoak forest alliance (S3.2) (see **Appendix A, Figure 8** for a map showing locations of SNC classified in the PSB).

Table 6-2 Sensitive Natural Communities Potential to Occur within the Project Study Boundary

Habitat Type	Global Rank[2]	State Rank[2]	Potential to Occur in the PSB
Douglas fir-tanoak forest and woodland Alliance SNC	G3	S3	**Present.** The Douglas fir-tanoak forest and woodland Alliance SNC occurs in one section of the northern PSB and totals 25,675 sq. ft (0.59 acres).
Redwood forest and woodland Alliance SNC	G3	S3.2	**Present.** The Redwood forest and woodland Alliance SNC occurs in one section of the PSB near Leggett Creek and totals 16,505 sq. ft (0.38 acres).
Tanoak forest Alliance SNC	G4	S3.2	**Present.** Tanoak forest Alliance SNC occurs in two sections of the northern PSB and totals 48,260 sq. ft (1.11 acres).

6.3.1 Vegetation Assessment and Mapping

Vegetation communities classified in the PSB are largely located around the WWTF site, to the north and south of Leggett Creek and to the west of the SF Eel River (**Appendix A, Figure 8**).

Stands that could qualify as Douglas fir-tanoak forest and woodland Alliance (S3) SNC (**Appendix E,** Sheet "RCSD001") are located on the south side of Leggett Creek and upslope, bordering the WWTF to the north and northwest. The stand is dominated by Douglas fir in the overstory, with an understory dominated by tanoak. The shrub layer is sparse and diverse, and the herb layer has very low cover due to the heavy tanoak leaf litter on the forest floor.

Stands that could qualify as Redwood forest and woodland Alliance (S3.2) SNC (**Appendix E, Sheet "RCSD002")** are located on the lower riparian slope of Leggett Creek on the immediate north and south side of the creek corridor. The stand is largely comprised of small diameter redwood and Douglas fir trees in the overstory, with the relative cover of redwood slightly higher than that of Douglas fir. The understory has a mix of tanoak, bigleaf maple (*Acer macrophyllum*), and California bay (*Umbellularia californica*), with heavy redwood duff and a shaded understory inhibiting the robust growth of herbs on the forest floor. Shrub cover is low to moderate.

Stands that could qualify as Tanoak forest Alliance (S3.2) SNC (**Appendix E, Sheet "RCSD003")** are located on the north side of Leggett Creek and upslope, at the margins of the access road running south of the treatment ponds. The stand is dominated by small diameter and multi-stemmed tanoak (regenerating stand) mixed with minor amounts of true oaks (*Quercus* sp.), Pacific madrone (*Arbutus menziesii*), and sparse, isolated Douglas fir. The herb and shrub layer are very sparse, with occasional dense patches of low-lying poison oak (*Toxicodendron diversilobum*).

6.4 Aquatic Resources

A wetland delineation was conducted within the PSB on June 9, 2022. No USACE three-parameter wetlands were observed, however waters of the U.S. and state (Leggett Creek) occur within the PSB. Please see the Aquatic Resources Delineation Report for details (GHD 2022). Two artificially created percolation ponds exist in the PSB, but are not considered Waters of the U.S. or State and are therefore not jurisdictional aquatic resources (40 CFR § 230.3; Clean Water Act Section 404(f)(5); SWCQB 2019 II.3.d). The Ordinary High Water Mark (OHWM) of Leggett Creek was not collected because access to it was unsafe due to its location within a deep canyon, and because no work is proposed within Leggett Creek. Erosion control and other Best Management Practices (BMPs) to protect water quality would be enacted while working in the vicinity of the Leggett Creek**.**

6.5 Special Status Wildlife

6.5.1 Wildlife Habitat Evaluation Results

The PSB and Action Area/BSA is composed of secondary growth coniferous and hardwood forest habitat, with a portion adjacent to the WWTF extending to riparian vegetation and the SF Eel River. The canopy in this section of the PSB is well established, with a diverse understory of shrubs and herbaceous plants. Leggett Creek crosses over a section of the PSB, which has known Coho Salmon and Steelhead occurrences (CDFW 2007). In the northernmost section of the PSB, non-native grasses dominant the understory below tanoak, Douglas fir, and other oak species. The five pump stations are along roads, primarily in residential areas. The habitat surrounding the pump stations includes coast redwood, other coniferous and hardwood species, and private properties.

The area adjacent to the WWTF and pipe that crosses Leggett Creek serves as potential nesting, foraging, roosting, and breeding habitat for special status bird species. Additionally, the SF Eel River and its reaches compose a small part of the BSA. Portions of the BSA are located in areas with human disturbance and existing noise from the WWTF, roads, and residential properties. However, various special status wildlife species have been observed within or nearby the BSA (see **Table 6-3**). Species with potential to occur within the BSA are discussed below.

6.5.2 Wildlife Species Observed On-site

Various species (mainly birds) were observed within the PSB during the July 11, 2022, reconnaissance-level site visit. Tables of all wildlife species detected during the site visit are presented in **Tables F-1** and **F-3 (Appendix F)**. **Table F-2** is a list of avian breeding codes, associated bird behavior, and breeding status. **Tables F-1** and **F-3** are not intended to be comprehensive lists of all species that could occur within the PSB as no protocol level surveys have been conducted.

6.5.3 Federally listed Wildlife Species

The following nine federally listed or under review wildlife species that are regulated by the USFWS under the ESA were identified during scoping the vicinity of the PSB (CNDDB at 9-quad search area) and Action Area/BSA (IPaC at Action Area-level): Pacific Marten (*Martes caurina*; threatened) Coastal Distinct Population Segment (DPS), Humboldt Marten (*Martes caurina humboldtensis*; threatened), Marbled Murrelet (*Brachyramphus marmoratus*; threatened), Northern Spotted Owl (threatened), Western Snowy Plover (*Charadrius nivosus nivosus*; threatened), Western Yellow-billed Cuckoo (*Coccyzus americanus*; threatened), Monarch Butterfly *(Danaus plexippus*; candidate), California Coastal ESU of Chinook Salmon (threatened), and SONCC ESU of Coho Salmon (threatened).

Six of the nine listed or under review species above are unlikely to occur in the Action Area due to a lack of suitable habitat present and/or the Action Area being outside of the species current range. The following three species have a moderate to high potential to occur within the Action Area: Northern Spotted Owl, Coho Salmon, and Chinook Salmon. The Northern Spotted Owl has a moderate potential to occur based on recorded observations nearby the Action Area and the habitat structure within and adjacent to the Action Area (**Table 6-3**). Coho Salmon have a high potential to occur due to previous detections in Leggett Creek (CDFW 2007). Additionally, Chinook Salmon have a moderate potential to occur based on detections in the SF Eel River (Starks and Renger 2016).

6.5.4 California State Listed or Special Status Wildlife Species

Eight state listed or candidate wildlife species 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), as follows: Humboldt Marten (endangered), Marbled Murrelet (endangered), Northern Spotted Owl (threatened), Western Yellow-billed Cuckoo (endangered), Little Willow Flycatcher (*Empidonax traillii brewsteri;* endangered), Foothill Yellow-legged Frog (endangered), SONCC ESU Coho Salmon (threatened), and Summer-run Steelhead Trout (candidate endangered).

Four of the eight state listed species are unlikely to occur based on a lack of suitable habitat, recorded observations, or the BSA being outside of the species range. The Northern Spotted Owl, Foothill Yellow-legged Frog, Coho Salmon, and Steelhead Trout have a moderate or high potential to occur based on detections within the BSA and present suitable habitat.

In addition to state listed species, occurrences for 17 other wildlife species with special state protections (or tracked via the CNDDB) were identified within the 9-quad search area. Seven of these species are unlikely to occur based on the absence of highly suitable habitat features within the BSA. Ten of these species have a moderate or high potential to occur within or nearby the BSA: Sonoma Tree Vole (*Arborimus pomo*; CDFW SSC), North American Porcupine (*Erethizon dorsatum*; CDFW Special Animals List), Western Red Bat (*Lasiurus blossevillii*; CDFW SSC), Long-eared Myotis (*Myotis evotis*; BLM Sensitive), Fisher (*Pekania pennanti*; CDFW SSC), Cooper's Hawk (*Accipiter cooperii*; CDFW WL), Osprey (*Pandion haliaetus;* CDFW WL), Northern Red-legged Frog (*Rana aurora*; CDFW SSC), Southern Torrent Salamander (*Rhyacotriton variegatus;* CDFW SSC), and Western Pond Turtle (*Emys marmorata;* CDFW SSC)

Table 6-3 Special Status Wildlife Species' Potential to Occur within the Action Area/Biological Study Area

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA
Mammals								
Antrozous pallidus	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.	**Low potential.** Riparian woodland and forested habitat is available within the BSA. However, open dry habitat with rocky areas for roosting is not available.
Arborimus pomo	Sonoma Tree Vole	None	None	G3	S3	CDFW SSC-Species of Special Concern, IUCN NT-Near Threatened	In old growth or late seral Douglas-fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionaly take needles of grand fir, hemlock or spruce.	**High potential.** An observation was recorded within the BSA near Leggett Creek in October 2014 and within the BSA near a pump station adjacent to Briceland Thorne Road in June 2019 (iNaturalist 2022).
Erethizon dorsatum	North American Porcupine	None	None	G5	S3	IUCN LC-Least Concern	Woodland and coniferous 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.	**High potential.** An observation was recorded in the BSA on June 3, 2014 (iNaturalist 2022).

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA
Lasiurus blossevillii	Western Red Bat	None	None	G4	S3	CDFW SSC-Species of Special Concern, IUCN LC-Least Concern, WBWG H-High Priority	Woodland, coniferous, and riparian forests. Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**Moderate potential.** Detections have been recorded approximately 15 miles from the PSB, with the most recent being September 22, 2021 (BAMVT 2022). Riparian woodland and conifer forest habitat is available within the PSB and BSA. Trees are available for roosting.
Martes caurina	Pacific Marten, Coastal Distinct Population Segment	Threatened	None	G4	S3		The Pacific marten typically inhabits older, ecologically complex forests throughout western North America, the coastal DPS occurs only along the coastal regions of California and Oregon.	**Low potential.** The Action Area is within the species range. However, the habitat and proximity to human development within the Action Area is not highly suitable.
Martes caurina humboldtensis	Humboldt Marten	Threatened	Endangered	G4G5T1	S1	CDFW SSC-Species of Special Concern, USFS S-Sensitive	Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County. Associated with late-successional coniferous forests, prefer forests with low, overhead cover.	**Low potential.** The Action Area is outside of the extant population area, but it is within predicted suitable habitat for the species (Moriarty et al. 2021). The habitat and proximity to human development within the Action Area is not highly suitable.
Myotis evotis	Long-eared Myotis	None	None	G5	S3	BLM S-Sensitive, IUCN LC-Least Concern, WBWG M-Medium Priority	Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.	**Moderate potential.** Few detections were recorded approximately 15 miles from the PSB in September 2012 (BAMVT 2022). Woodland and forest habitat is available within the PSB and BSA. There is the availability of buildings and trees for roosting.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA
Pekania pennanti	Pacific Fisher	None	None	G5	S2S3	BLM S-Sensitive, CDFW SSC-Species of Special Concern, USFS S-Sensitive	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.	**Moderate potential.** An observation was recorded within 12 miles of the PSB in April 2018 (iNaturalist 2022). The PSB is located within known fisher range and habitat type (Furnas et al. 2017). The species was also observed less than 0.2 miles from the BSA in 2018 (CDFW 2022e).
Birds								
Accipiter cooperii	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.	**High potential.** There is suitable habitat within and nearby the PSB and BSA for foraging and nesting. Numerous observations have been recorded within 3 miles of the PSB, as recent as April 1, 2022. An observation was recorded within the PSB on May 9, 2014 (eBird 2022).
Aquila chrysaetos	Golden Eagle	None	None	G5	S3	BLM S-Sensitive, CDF S-Sensitive, CDFW FP-Fully Protected, CDFW WL-Watch List, IUCN LC-Least Concern	Wide variety of habitats including upland, montane coniferous forests, prairie, grassland scrubland, sage juniper, desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Low potential.** Numerous observations have been recorded within 2 miles of the BSA, as recent as February 5, 2022 (eBird 2022). However, the BSA is unlikely to provide suitable nesting habitat for the species and a fly over is more likely to occur.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA
Brachyramphus marmoratus	Marbled Murrelet	Threatened	Endangered	G3	S2	CDF S-Sensitive, IUCN EN-Endangered, NABCI RWL-Red Watch List	Lower montane coniferous forest, oldgrowth, 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.	**Low potential.** The Action Area is within federally designated critical habitat for the species (USFWS 2016, ECOS 2022). Although the Project is further than 6 miles from the ocean, the species has been detected up to 25 miles inland (Mack et al. 2003). However, the Action Area is outside of the currently mapped species range (CDFW 2022f).
Charadrius nivosus nivosus	Western Snowy Plover	Threatened	None	G3T3	S2	CDFW SSC-Species of Special Concern, NABCI RWL-Red Watch List	Great Basin standing waters; sand shore; wetland Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**No potential.** No suitable habitat is present within or nearby the Action Area.
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	Threatened	Endangered	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.	**No potential.** The Action Area is outside of the species range.
Empidonax traillii brewsteri	Little Willow Flycatcher	None	Endangered	G5T3T4	S1S2		Mountain meadows and riparian habitats in the Sierra Nevada and Cascades. Nests near the edges of vegetation clumps and near streams.	**Low potential.** Riparian woodland habitat is marginally available within and nearby the PSB. There are no observations reported near the PSB or BSA (eBird 2022).

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA
Falco peregrinus anatum	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.	**Low potential.** The SF Eel River is within the BSA. An observation was recorded approximately 3 miles away on March 19, 2016 (eBird 2022). However, the BSA does not contain suitable nesting habitat for this species.
Pandion haliaetus	Osprey	None	None	G5	S4	CDF S-Sensitive, CDFW WL-Watch List, IUCN LC-Least Concern	Riparian forest, ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	**High potential.** Numerous observations have been recorded within 3 miles of the BSA, as recent as June 24, 2022. An observation was recorded approximately 0.6 miles away on April 27, 2022 (eBird 2022).
Strix occidentalis caurina	Northern Spotted Owl	Threatened	Threatened	G3T3	S2S3		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.	**Moderate potential.** Suitable habitat is located within and adjacent to the Action Area. An observation was recorded in 1999 approximately 0.5 miles west of the Action Area. Another observation was recorded approximately 1 mile from the Action Area in 1994 (CDFW 2022e). The Action Area does not encompass critical habitat for this species (Appendix D; IPaC Report). The species would be more likely to fly over than to nest within the Action Area.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA
Reptiles								
Emys marmorata	Western Pond Turtle	None	None	G3G4	S3	BLM S-Sensitive, CDFW SSC-Species of Special Concern, IUCN VU-Vulnerable, USFS S-Sensitive	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**High potential.** Numerous observations have been recorded immediately adjacent to and within the BSA, as recent as July 3, 2019 (iNaturalist 2022).
Amphibians								
Rana aurora	Northern Red-legged Frog	None	None	G4	S3	CDFW SSC-Species of Special Concern, IUCN LC-Least Concern, USFS S-Sensitive	Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	**Moderate potential.** Riparian forest habitat available within and nearby the PSB and BSA. Permanent river (Eel River) immediately adjacent to PSB.
Rana boylii	Foothill Yellow-legged Frog (North Coast clade)	None	None	G3	S3	BLM S-Sensitive, CDFW SSC-Species of Special Concern, IUCN NT-Near Threatened, USFS S-Sensitive	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.	**High potential.** Riparian forest habitat available within and nearby the BSA. Permanent river (Eel River) immediately adjacent to PSB. An observation was recorded approximately 0.2 miles from the PSB in April 2019 (iNaturalist 2022). Numerous other observations recorded in the vicinity (iNaturalist 2022).
Rhyacotriton variegatus	Southern Torrent Salamander	None	None	G3G4	S2S3	CDFW SSC-Species of Special Concern, IUCN LC-Least Concern, USFS S-Sensitive	Old growth forest. Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water.	**Moderate potential.** Riparian forest habitat is available within and nearby the PSB and BSA. Leggett Creek may provide suitable cold, well-shaded habitat.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA
Taricha rivularis	Red-Bellied Newt	None	None	G2	S2	CDFW SSC-Species of Special Concern, IUCN LC-Least Concern	Coniferous, redwood, and riparian forests. Coastal drainages from Humboldt County south to Sonoma County, inland to Lake County. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean, rocky substrate.	**Low potential.** Riparian forest habitat is available within and nearby the BSA. However, the nearest observation was recorded in 2006 in Mendocino County (iNaturalist 2022). Specimens from as recent as 1995 were collected approximately 7 miles west of the BSA (AmphibiaWeb 2022).
Fish								
Oncorhynchus tshawytscha	Chinook Salmon – California Coastal ESU	Threatened	None	G5	S1	AFS TH-Threatened	Rivers and streams south of the Klamath River to the Russian River.	**Present in Action Area.** The species has been detected in reaches of the SF Eel River, which is within the Action Area, in 2014 and 2015 (Starks and Renger 2016).
Oncorhynchus kisutch pop. 2	Coho Salmon - Southern Oregon / Northern California ESU	Threatened	Threatened	G5T2Q	S2	AFS TH-Threatened	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters. Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California. State listing refers to populations between the Oregon border and Punta Gorda, California.	**Present in Action Area.** Leggett Creek in the PSB and Eel River in the Action Area provide suitable habitat. Young of the year was detected in Leggett Creek in 2007 (CDFW 2007).
Oncorhynchus mykiss irideus pop. 36	Summer-run Steelhead Trout	None	Candidate Endangered	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	**Present in Action Area.** Leggett Creek in the PSB and the Eel River in the BSA provide suitable habitat. The species was detected in Leggett Creek in 2007 (CDFW 2007).

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA
							water and clean loose gravel for spawning, and suitably large pools in which to spend the summer.	
Insects								
Bombus caliginosus	Obscure Bumble Bee	None	None	G2G3	S1S2	IUCN VU-Vulnerable	Coastal areas from Santa Barbara County to north to Washington state. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	**Low potential.** The PSB falls within the species current range, but the preferred shrubland and grassland habitat is not available (Hatfield et al. 2014).
Bombus occidentalis	Western Bumble Bee	None	None	G2G3	S1	USFS S-Sensitive	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	**Low potential.** The PSB falls within the species current range. The preferred grassland and scrub habitat is not available (Hatfield et al. 2015). Patches of nectar plants needed for foraging are not present.
Danaus plexippus	Monarch Butterfly – California overwintering, pop. 1	Candidate	None	G4T2T3	S2S3		Fields, roadside areas, open areas, wet areas or urban gardens. This species only lays eggs on milkweed. Overwintering tree habitat includes eucalyptus, Monterey pine, Monterey cypress, western sycamore, coast redwood, and coast live oak trees.	**Low potential.** The Action Area is within the species range, but the habitat requirements for overwintering is minimally present.
Mollusks								
Noyo intersessa	Ten Mile Shoulderband	None	None	G2	S2		Coastal dunes, coastal scrub, redwood, riparian forest. Found in coastal dunes, coastal scrub, and riparian redwood forest habitats.	**No potential.** No suitable aquatic habitat or host fish available within the PSB.

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA

Footnotes:
[1] Rankings From CNDDB (January 2022).
[2] General Habitat, And Microhabitat Column Information, Reprinted From CNDDB (January 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 2022d); ? = " Denotes Inexact Numeric Rank" (Natureserve 2022); Q = " Questionable Taxonomy That May Reduce Conservation Priority" (Natureserve 2022)

State Rank: State Rank From Natureserve's Heritage Methodology (Natureserve 2022) (Ranking According To Degree Of Imperilment In The State (California) - S1 = Critically Imperiled—Critically Imperiled In The State Because Of Extreme Rarity (Often 5 Or Fewer Populations) Or Because Of Factor(S) Such As Very Steep Declines Making It Especially Vulnerable To Extirpation From The State; S2 = Imperiled—Imperiled In The State Because Of Rarity Due To Very Restricted Range, Very Few Populations (Often 20 Or Fewer), Steep Declines, Or Other Factors Making It Very Vulnerable To Extirpation From The State; S3 = Vulnerable—Vulnerable In The State Due To A Restricted Range, Relatively Few Populations (Often 80 Or Fewer), Recent And Widespread Declines, Or Other Factors Making It Vulnerable To Extirpation From The State; S4 = Apparently Secure—Uncommon But Not Rare In The State; Some Cause For Long-Term Concern Due To Declines Or Other Factors; S5 = Secure—Common, Widespread, And Abundant In The State; SNR = State Not Ranked.

Other Statuses (Other Federal Or State Listings May Include):

AFS TH (American Fisheries Society Threatened):"A Taxon That Is In Imminent Danger Of Becoming Endangered Throughout All Or A Significant Portion Of Its Range" (Jelks Et Al. 2008).

AFS VU (American Fisheries Society Vulnerable): "A Taxon That Is In Imminent Danger Of Becoming Threatened Throughout All Or A Significant Portion Of Its Range" (Jelks Et Al. 2008).

BLM S (Bureau Of Land Management Sensitive): "(1) Species Listed Or Proposed For Listing Under The Endangered Species Act (ESA), And (2) Species Requiring Special Management Consideration To Promote Their Conservation And Reduce The Likelihood And Need For Future Listing Under The ESA, Which Are Designated As Bureau Sensitive By The State Director(S). All Federal Candidate Species, Proposed Species, And Delisted Species In The 5 Years Following Delisting Would Be Conserved As Bureau Sensitive Species." (CDFW 2022d);

CDF S (California Department Of Forestry And Fire Protection Sensitive): "Those Species That Warrant Special Protection During Timber Operations" (CDFW 2022d);

CDFW FP (CDFW Fully Protected Animal): "This Classification Was The State Of California's Initial Effort To Identify And Provide Additional Protection To Those Animals That Were Rare Or Faced Possible Extinction. Lists Were Created For Fish, Amphibians And Reptiles, Birds And Mammals. Most Of The Species On These Lists Have Subsequently Been Listed Under The State And/Or Federal Endangered Species Acts." (CDFW 2022d);

CDFW SSC (CDFW Species Of Special Concern): "It Is The Goal And Responsibility Of The Department Of Fish And Wildlife To Maintain Viable Populations Of All Native Species. To This End, The Department Has Designated Certain Vertebrate Species As 'Species Of Special Concern' Because Declining Population Levels, Limited Ranges,

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA

And/Or Continuing Threats Have Made Them Vulnerable To Extinction. The Goal Of Designating Species As 'Species Of Special Concern' Is To Halt Or Reverse Their Decline By Calling Attention To Their Plight And Addressing The Issues Of Concern Early Enough To Secure Their Long-Term Viability" (CDFW 2022d);

CDFW WL (California Department Of Fish And Wildlife Watch List): "The CDFW Maintains A List Consisting Of Taxa That Were Previously Designated As "Species Of Special Concern" But No Longer Merit That Status, Or Which Do Not Yet Meet SSC Criteria, But For Which There Is Concern And A Need For Additional Information To Clarify Status" (CDFW 2022d);

IUCN LC (International Union For Conservation Of Nature Least Concern): "When It Has Been Evaluated Against The Criteria And Does Not Qualify For Critically Endangered, Endangered, Vulnerable Or Near Threatened" (IUCN 2012);

IUCN NT (International Union For Conservation Of Nature Near Threatened): "When It Has Been Evaluated Against The Criteria But Does Not Qualify For Critically Endangered, Endangered Or Vulnerable Now, But Is Close To Qualifying For Or Is Likely To Qualify For A Threatened Category In The Near Future (IUCN 2012);

IUCN VU (International Union For Conservation Of Nature Vulnerable): "When The Best Available Evidence Indicates That It Meets Any Of The Criteria A To E For Vulnerable…, And It Is Therefore Considered To Be Facing A High Risk Of Extinction In The Wild" (IUCN 2012);

IUCN EN (International Union For Conservation Of Nature Endangered): "When The Best Available Evidence Indicates That It Meets Any Of The Criteria A To E For Endangered…,And It Is Therefore Considered To Be Facing A Very High Risk Of Extinction In The Wild" (IUCN 2012);

MMC SSC (Marine Mammal Commission Species Of Special Concern): No Definition Available.

NABCI RWL (North American Bird Conservation Initiative Red Watch List): "Species With Extremely High Vulnerability" (CDFW 2022d);

NMFS SC (National Marine Fisheries Service Species Of Concern): "Species About Which NOAA's NMFS Has Some Concerns Regarding Status And Threats, But For Which Insufficient Information Is Available To Indicate A Need To List The Species Under The Endangered Species Act" (CDFW 2022d);

USFS S (U.S. Forest Service Sensitive): "Plant And Animal Species Identified By A Regional Forester For Which Population Viability Is A Concern, As Evidenced By Significant Current Or Predicted Downward Trends In Population Numbers Or Density And/Or Significant Current Or Predicted Downward Trends In Habitat Capability That Would Reduce A Species' Existing Distribution" (CDFW 2022d);

USFWS BCC (U.S. Fish And Wildlife Service Birds Of Conservation Concern): "The Goal Of The Birds Of Conservation Concern 2008 Report Is To Accurately Identify The Migratory And Non-Migratory Bird Species (Beyond Those Already Designated As Federally Threatened Or Endangered) That Represent Our Highest Conservation Priorities And Draw Attention To Species In Need Of Conservation Action" (CDFW 2022d);

WBWG H- (Western Bat Working Group High Priority): "Those Species Considered The Highest Priority For Funding, Planning, And Conservation Actions. Information About Status And Threats To Most Species Could Result In Effective Conservation Actions Being Implemented Should A Commitment To Management Exist. These Species Are Imperiled Or Are At High Risk Of Imperilment" (BCI 1998);

WBWG LM- (Western Bat Working Group Low Priority): "Most Of The Existing Data Support Stable Populations Of The Species, And That The Potential For Major Changes In Status In The Near Future Is Considered Unlikely. While There May Be Localized Concerns, The Overall Status Of The Species Is Believed To Be Secure" (BCI 1998);

WBWG M- (Western Bat Working Group Medium Priority): "A Level Of Concern That Should Warrant Closer Evaluation, More Research, And Conservation Actions Of Both The Species And Possible Threats" (BCI 1998);

XERCES IM (Xerces Society Imperiled): Species "At High Risk Of Extinction Because Of Highly Restricted Range, Rare Populations (Often 20 Or Fewer), Steep Declines, Or Other Factors" (Natureserve 2022).

Scientific Name	Common Name	FESA	CESA	GRank[1]	SRank[1]	Other Status[1]	Habitat[2]	Potential to Occur within Action Area/BSA
Potential To Occur: **No Potential**: Habitat in and adjacent to the BSA 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 BSA. **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 BSA. **High Potential**: All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found in the BSA. **Present**: Detected or documented within the BSA.								

6.6 Critical Habitat

There is Marbled Murrelet critical habitat within the Action Area, specifically within the eastern section of the northern Action Area and within the easternmost pump station Action Area (USFWS 2016, ECOS 2022). Marbled Murrelet critical habitat within the Action Area is shown in **Appendix A, Figure 9.** However, no Project work would occur within said critical habitat and potential noise impacts that could travel into said critical habitat are not anticipated to be substantial and would be temporary.

7. Future Actions

7.1.1 Reasonably Foreseeable Potential Non-Federal Actions

There are no known, reasonably certain to occur, non-federal actions proposed within the Action Area.

7.1.2 Reasonably Foreseeable Potential Federal Actions

No known or reasonably foreseeable potential federal actions are proposed within the Action Area at this time.

8. Recommended Avoidance and Minimization Measures

In general, Project activities would be localized and temporary and are not expected to result in any significant impacts or effects to sensitive biological resources. Vegetation clearing along the access road, ground disturbance, or entrance of sediment or other construction-related debris into Leggett Creek or the SF Eel River has the potential to adversely effect plants, wildlife, or aquatic resources within the Project Area or Action Area/BSA. However, these potential impacts (if any) would be avoided and minimized as described in Section 8. Potential impacts would be addressed in greater detail in environmental compliance documents and associated permit applications if required.

With incorporation of the avoidance and minimization measures proposed below, implementation of the Project is not anticipated to result in significant adverse impacts or effects to biological resources.

8.1 Proposed Avoidance and Minimization Measures

Special Status Plants

No rare plants were observed within the PSB during the seasonally appropriate botanical surveys and habitat within the Project Area appeared marginal for special status plants with potential to occur (see **Table 6-1**). Due to these reasons no avoidance and minimization measures are proposed for special status plants.

Mammals

There is moderate or high potential for special status mammals to occur within the Action Area/BSA, including: Sonoma Tree Vole (high potential), North American Porcupine (high potential), and Fisher (moderate potential). No removal of old growth or late seral habitat is proposed, and therefore no impacts are anticipated to Sonoma Tree Voles. The Project involves some excavation and there is potential for the porcupine or Pacific Fisher to become stranded in deep excavations, therefore the following measure is proposed to avoid potential impacts to special status mammals.

Measure BIO-1: Limitations to Overnight Excavation Areas

No steep sided excavations, defined as greater than two to one ratio shall be left open overnight during construction. If excavations cannot be covered, a ramp shall be placed at one end to prevent animals from becoming trapped. Contractors shall walk around large equipment prior to an early morning startup to ensure animals are not sheltering underneath. No loose dogs or other pets shall be allowed onsite during construction.

With implementation of Measure BIO-1, impacts to special-status terrestrial mammals such as the North American Porcupine and Pacific Fisher would be reduced due to the restrictions on open excavations, check of equipment prior to start up, and pet control.

Special Status Bats

Based upon the reconnaissance-level site assessment, habitat for bats (tree cavities, loose bark, and riparian forest) is present in the PSB. Trees and vegetation in the PSB may provide habitat for a variety of bat species. Construction of the Project may adversely impact special status bat species through the removal or modification of trees and/or vegetation, ground disturbance, as well as potential noise disturbance. Two special status bats, Western Red Bat and Long-eared Myotis, have a moderate potential to occur within the PSB. To reduce potential impacts to these species, the following measure is recommended for inclusion in environmental documentation.

Measure BIO-2: Protect Special Status Bats

- If feasible remove confirmed or presumed-occupied bat roost habitat (trees with cavities or loose bark, or riparian forest) only during seasonal periods of bat activity (when bats are volant, i.e. able to leave roosts) between March 1 and April 15 or September 1 and October 15, when evening temps rise to about 45 F, and when no rainfall greater than ½ inch has occurred in the last 24 hours.
- If presumed-occupied bat roost habitat cannot be removed during the volant period, i.e. Project activities occur during the bat maternity season which generally occur April 16 through August 30, a qualified biologist shall conduct surveys within suitable habitat for special status bats. Survey methodology shall include visual examination with binoculars and may optionally utilize ultrasonic detectors to determine if special status bat species utilize the vicinity.
  - Surveys shall be conducted by a qualified biologist within seven days prior to construction in any areas where potential maternity roosts may be disturbed/removed. The preconstruction surveys for bats may coincide with pre-construction surveys for other animals or plants if needed.
  - Surveys shall include a visual inspection of the suitable habitat (i.e. trees with cavities, loose bark, or riparian forest) within the impact area. If the presence of a maternity roost or bat activity is confirmed, an appropriate buffer distance would be established in coordination with CDFW to ensure that construction noise would remain below disturbance thresholds for bats. If no bat utilization or roosts are found, then no further survey or action is required.

With inclusion of measure BIO-2, potential impacts to special status bats would either be avoided or minimized through appropriately timed removal of suitable habitat, or surveys and potential follow up coordination with CDFW to avoid impacts to special status bats.

Nesting Birds

There is potential for common and special status birds, protected under the MBTA and FGC to nest in the Action Area/BSA. Potential Project impacts to special status birds during construction may include visual disturbance, habitat destruction, and noise disturbance. The following measures are proposed to avoid potential adverse impacts or effects.

Measure BIO-3: Protect Nesting Birds

- To avoid direct effects to special status or protected birds, ground disturbance and vegetation clearing shall be conducted, if possible, during the fall and/or winter months or outside of the avian nesting season (which is generally assumed to occur between March 15 – August 15). If ground disturbance or vegetation clearing cannot be confined to outside of the avian nesting season, a qualified biologist shall conduct pre-construction surveys within the PSB and immediate vicinity (defined for the purposes of this measure to be 500 feet outside 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. If the 500-foot vicinity of the PSB cannot be physically searched, it shall be visually and audibly assessed. The biologist shall 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, the qualified biologist shall conduct a supplemental avian pre-construction survey before Project work is reinitiated.
- If active nests are detected within the PSB footprint or immediate vicinity, the biologist shall flag a buffer around each nest. Construction activities shall avoid nest sites until the biologist determines that the young have fledged or nesting activity has ceased. If nests are documented outside of the PSB, but up to 500 feet of the PSB, 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. The qualified biologist shall monitor all nests at least once per week to determine whether birds are being disturbed. If signs of disturbance or distress are observed, the qualified biologist shall immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, and/or halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased.

With inclusion of measure BIO-3, potential impacts to special status nesting birds, and migratory or common nesting birds would either be avoided or minimized through removal of habitat outside of the nesting season, or surveys for nests and potential no-work buffers around observed nests.

Special Status Reptiles and Amphibians

One special status reptile (Western Pond Turtle) and three special status amphibians (Northern Red-legged Frog, Foothill Yellow-legged Frog, and Southern Torrent Salamander) have moderate to high potential to occur within the BSA given the habitat quality and available data, particularly within and on the banks of the SF Eel River. Although these species have moderate to high potential of occurring within the BSA, they are unlikely to occur within the PSB due to the absence of suitable habitat (consistent sources of water, riparian forest, wetlands). However, due to the adjacency of suitable habitat, the following measure is recommended for inclusion into environmental documentation to avoid or reduce potential impacts to special status reptiles and amphibians.

Measure BIO-4: Protect Special Status Reptiles and Amphibians

A pre-construction survey for special status reptiles or amphibians (i.e. Western Pond Turtle, Northern Red-legged Frog, Foothill Yellow-legged Frog and Southern Torrent Salamander) would occur within seven days of Project-related ground disturbance within areas of suitable habitat within the PSB. Suitable habitat is assumed to include the southern portion of the WWTF and the Azaelia lift station (i.e. areas that are closest to the SF Eel River). The biologist would relocate any specimens that occur within this area to nearby suitable habitat outside of the Project work zone.

With inclusion of measure BIO-4, potential impacts to special status reptiles or amphibians would either be avoided or minimized through pre-ground disturbance surveys and potential relocation of observed species.

Fish and Aquatic Resources

No in-water work is proposed under the Project, however work over Leggett Creek would occur. No work is proposed within 100 feet of the SF Eel River. Standard construction BMPs such as use of straw wattles around areas of loose soil would be implemented in accordance with the Project's Construction General Permit which requires a Stormwater Pollution Prevention Plan (SWPPP). No additional measures to protect fish habitat and aquatic resource quality are proposed.

Sensitive Natural Communities

Up to 0.91 acres of woody vegetation would be removed under the Project, including some SNC habitat (tanoak forest, Douglas fir-tanoak forest, and redwood forest). Under current design, its anticipated that approximately 0.32 acres of SNC habitat would be trimmed or removed, including 0.19 acre of the redwood forest and woodland alliance, 0.12 acres of the Douglas fir-tanoak forest and woodland alliance, and 165 square feet of the tanoak forest alliance. The following measure is recommended for incorporation into environmental documentation to offset these impacts to SNC habitat.

> **Measure BIO-5: Avoid and Offset Impacts to SNCs**
>
> Where possible, impacts to SNCs shall be avoided. To offset impacts to the tanoak forest alliance, Douglas fir-tanoak forest and woodland alliance, and redwood forest and woodland alliance SNCs (defined to include removal of tree species that are considered to be a component of SNC habitat), replanting of trees shall occur as close to the area of impact as is feasible. Trees shall not be replanted in a manner that could adversely affect the efficacy of the Project in the future (i.e. planting too close to the replacement effluent pipe). Species to be planted shall be equivalent to the species composition of the impacted SNC. The planting ratio shall be at least one to one and to the satisfaction of jurisdictional resource agencies, as required.

With incorporation of Measure BIO-5, impacts to SNC habitat would be avoided or offset through replacement plantings in the vicinity of the impact.

9. Effects Determination

9.1 ESA Listed Species Determinations

This BRE has been prepared in compliance with Section 7(c) of the ESA to evaluate the potential adverse effects of the proposed Project on federally listed endangered or threatened species. The proposed Project is described in Section 2. Of the nine federally listed or under review species with potential to occur in the Action Area (zero plants and nine wildlife species), six were excluded from further consideration due to the lack of suitable habitat in the Action Area and/or because the Action Area lies outside of the species' known current geographic range.

The following three federally listed species were considered in this BRE due to their moderate potential to occur within the Action Area or due to being documented within the Action Area in the past:

– Northern Spotted Owl (Moderate Potential)
– Chinook Salmon, California Coastal ESU (Previously detected within Action Area)
– Coho Salmon, SONCC ESU (Previously detected within the Action Area)

The Project would not include any in-water work, however would include the potential removal of up to 0.91 acres of woody vegetation predominantly consisting of understory shrubs, tan oak, Douglas-fir and redwood. No old growth, late seral or riparian habitat would be removed under the Project. Noise impacts would be temporary in duration and not substantial due to the absence of pile driving or other extremely loud construction activities and noise attenuation between the noise source and suitable habitat. Standard construction BMPs would be implemented to protect Leggett

Creek and the SF Eel River from potential construction-related sediment or other debris entering into the waterway. Due to these reasons, the Project would have **no effect** on the three considered ESA-listed species.

9.2 Critical Habitat Determinations

The Action Area overlaps federally designated critical habitat for the Marbled Murrelet (**Appendix A, Figure 9**), however no vegetation removal or other Project activities are proposed within critical habitat. There is potential for Project-derived noise to affect Marbled Murrelet critical habitat however potential noise would be temporary and not expected to affect Marbled Murrelet because the Action Area is outside of the currently mapped species range and there is low potential for Marbled Murrelet to occur or nest within the Action Area (CDFW 2022f). For these reasons, it is determined that the Project would have **no effect** on Marbled Murrelet critical habitat.

9.3 CESA Listed Species Determinations

Of the nine CESA listed or candidate species with potential to occur in the PSB or BSA (two plants and seven wildlife species), four were excluded from further consideration due to the lack of suitable habitat in the PSB and/or BSA because the PSB or BSA lie outside of the species' known current geographic range.

The following five state listed species were considered in this BRE due to their moderate potential to occur within the PSB or BSA or due to being documented within the PSB or BSA in the past:

– Northern Spotted Owl (Moderate Potential)
– Coho Salmon, SONCC ESU (Previously detected within the PSB)
– Summer-run Steelhead Trout (Previously detected within the PSB)
– Humboldt County milk-vetch (Moderate Potential)
– North Coast semaphore grass (Moderate Potential)

Due to the absence of in-water work, removal of old growth, late seral or riparian habitat, and the absence of special status plants during the two seasonally appropriate botanical surveys, the Project would have **no effect** on the five considered CESA-listed species.

10. Conclusion

– The Project would result in no impacts to terrestrial or aquatic wildlife movement, habitat connectivity, or migration. Construction would be of short-term duration and no permanent barriers would be constructed. Migration routes would not be impacted by operation of the Project.
– The Project does not conflict with any local policies or ordinances and the Project does not overlap any existing HCPs or NCCPs.
– With the implementation of erosion control and other BMPs as necessary, the Project would have no impact on aquatic resources.
– The avoidance and minimization measures listed in Section 8 would be implemented to avoid or reduce potential adverse impacts to special status wildlife and protected resources via pre-construction surveys and potential relocation, or avoidance.
– The Project would have no effect on federally listed species.
– The Project would have no effect on federally designated critical habitat.
– The Project would have no effect on state listed species.
– The Project would adversely affect up to approximately 0.91 acres of woody vegetation, including approximately 0.32 acres of SNC habitat which would be replanted as close to the area of impacts as is feasible.

Based on this evaluation, the Project is expected to have a less than significant impact on sensitive biological resources.

11. Scope and limitations

This report: has been prepared by GHD for Redway Community Services District and may only be used and relied on by Redway Community Services District for the purpose agreed between GHD and Redway Community Services District as set out in section 1.1 of this report.

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

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

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

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 12 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

12. Assumptions

Conclusions for this BRE were drawn from historic surveys and studies, as well as web-based sensitive species database and literature searches, and field surveys. 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 BRE have been based more on the assumption of presence or non-presence given existing habitat in the PSB and Action Area, and impact minimization measures have been developed accordingly. In addition, all determinations herein were based on the current Project Area footprint (Appendix A, Figure 2) and proposed Project description. If the Project Area footprint or construction methods change significantly prior to Project implementation, determinations would need to be revisited to ensure that they are still accurate.

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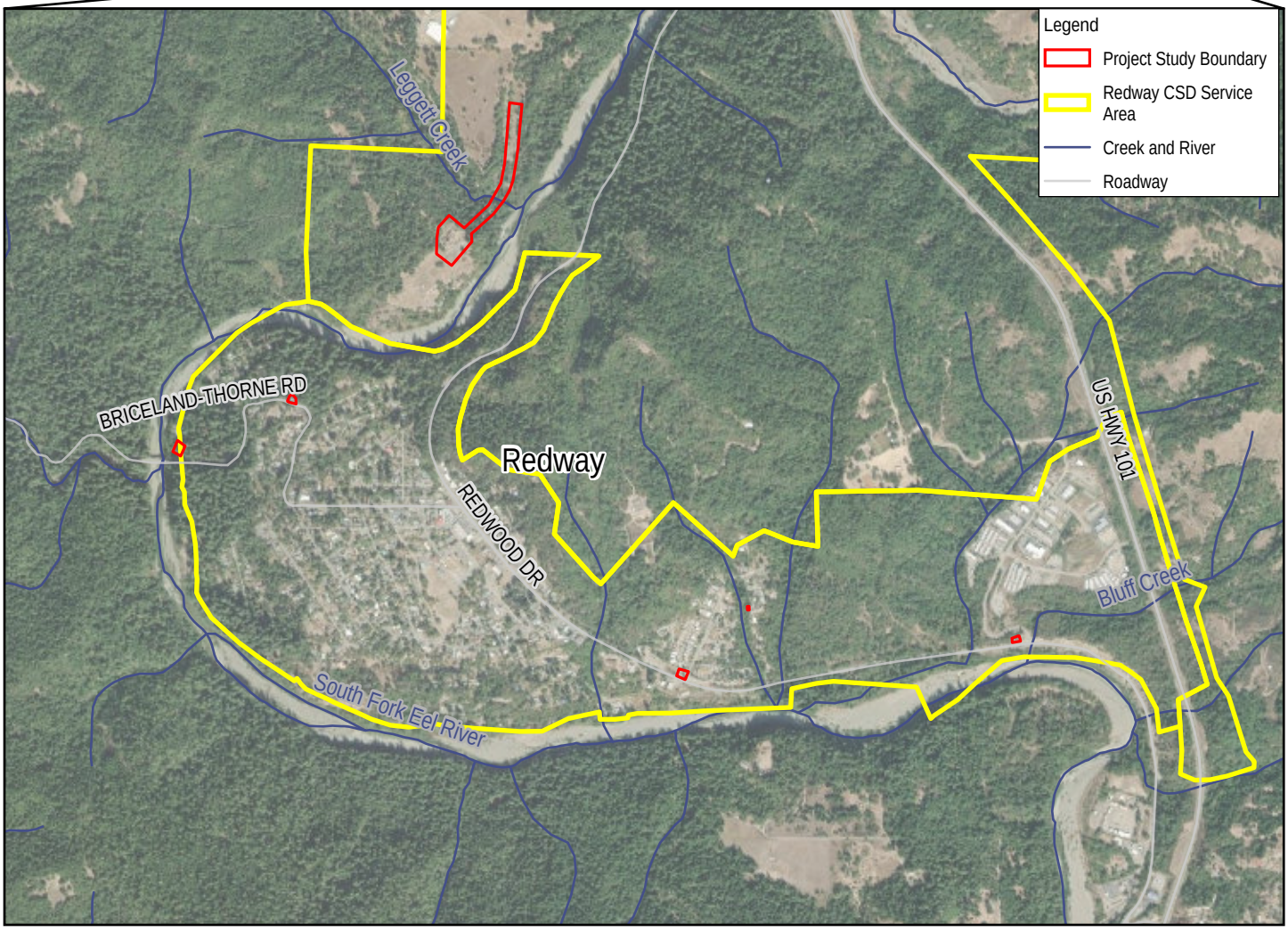
Appendix A

Figures



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0 570 1,140 1,710 2,280

Feet

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

O

GHD

Redway Community Services District
Wastewater System Infrastructure
Improvement Project

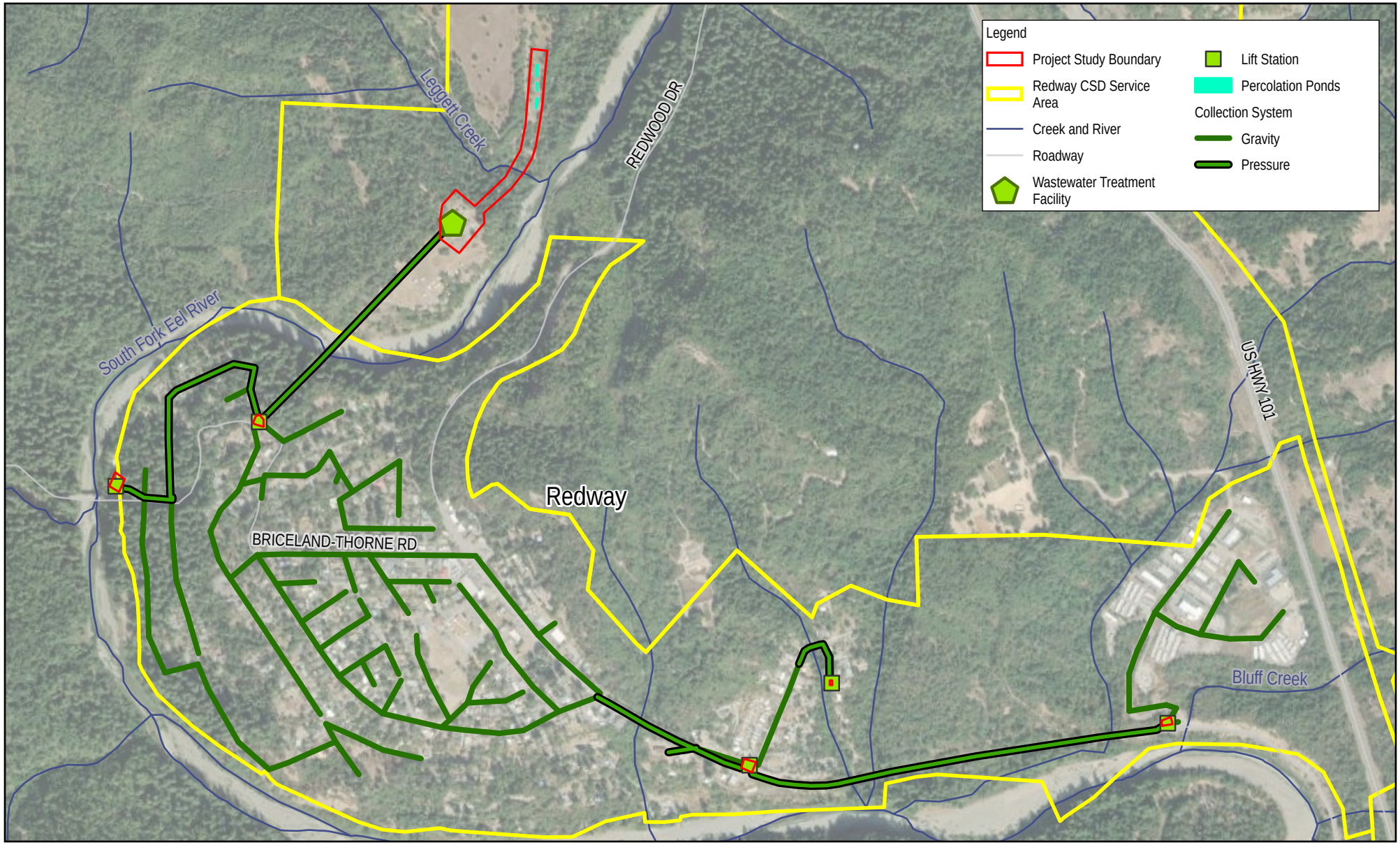
Project Vicinity

Project No.	11214230
Revision No.	-
Date	Oct 10, 2022

FIGURE 1

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2001_Vicinity_RevA
Print date: 10 Oct 2022 - 15:41

Data source: Project Boundary, Sep 22, 2022; NHD, 2020; Humboldt County Roads; World Topographic Map: Esri, HERE, Garmin, FAO, USGS, EPA, NPS; World Imagery: Maxar; World_Transportation: Esri, HERE. Created by: jclark2



Paper Size ANSI A

0 250 500 750 1,000

Feet

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

N

Redway Community Service District
Wastewater System Infrastructure Improvement Project

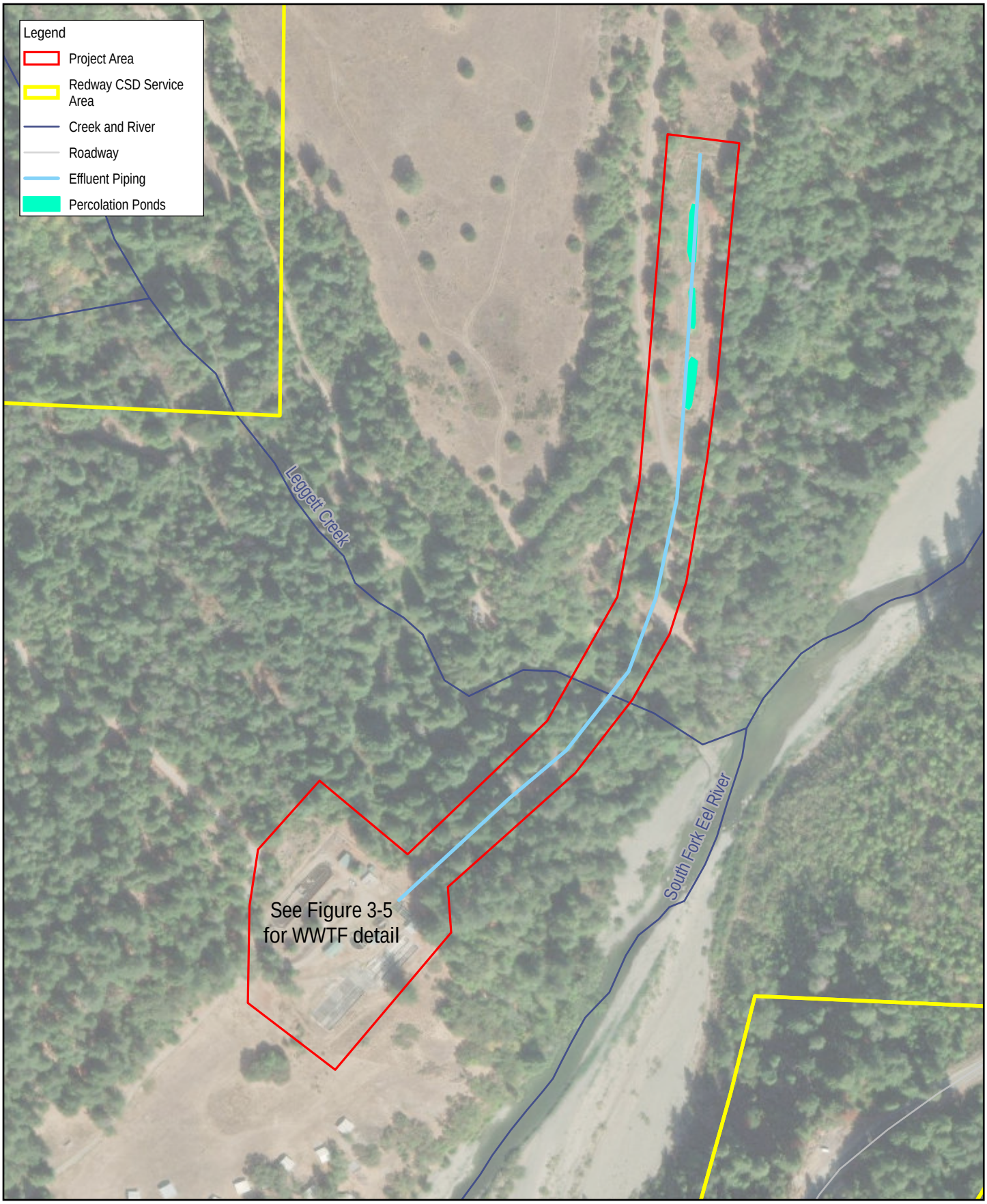
Project No. 11214230
Revision No. -
Date Oct 10, 2022

Project Study Boundary

FIGURE 2

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2002_ProjectArea_RevA
Print date: 10 Oct 2022 - 15:42

Data source: PSB, Sep 22, 2022; Collection system, GHD, 2021; Percolation ponds, GHD, 2022; CSD boundary and roads, Humboldt county; water lines, NHD, 2020 edited by GHD 2022;World Imagery: Maxar. Created by: jclark2



Paper Size ANSI A

0 75 150 225 300

Feet

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

N

Redway Community Services District
Wastewater System Infrastructure Improvement Project

Project Components
WWTF and Effluent

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 3-1

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2003_ProjectComponentsMB_RevC
Print date: 10 Oct 2022 - 16:25

Data source: PSB, GHD, 6/17/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

Paper Size ANSI A

0 60 120 180 240

Feet

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

Redway Community Services District
Wastewater System Infrastructure Improvement Project

Project Components
Azaela and Dogwood

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 3-2

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2003_ProjectComponentsMB_RevC
Print date: 10 Oct 2022 - 16:26

Data source: PSB, GHD, 6/17/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

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

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GHD

Redway Community Services District
Wastewater System Infrastructure Improvement Project

Project Components
Mill St and West Coast

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 3-3

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2003_ProjectComponentsMB_RevC
Print date: 10 Oct 2022 - 16:26

Data source: PSB, GHD, 6/17/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

Paper Size ANSI A

0 9.5 19 28.5 38

Feet

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

N

Redway Community Services District
Wastewater System Infrastructure Improvement Project

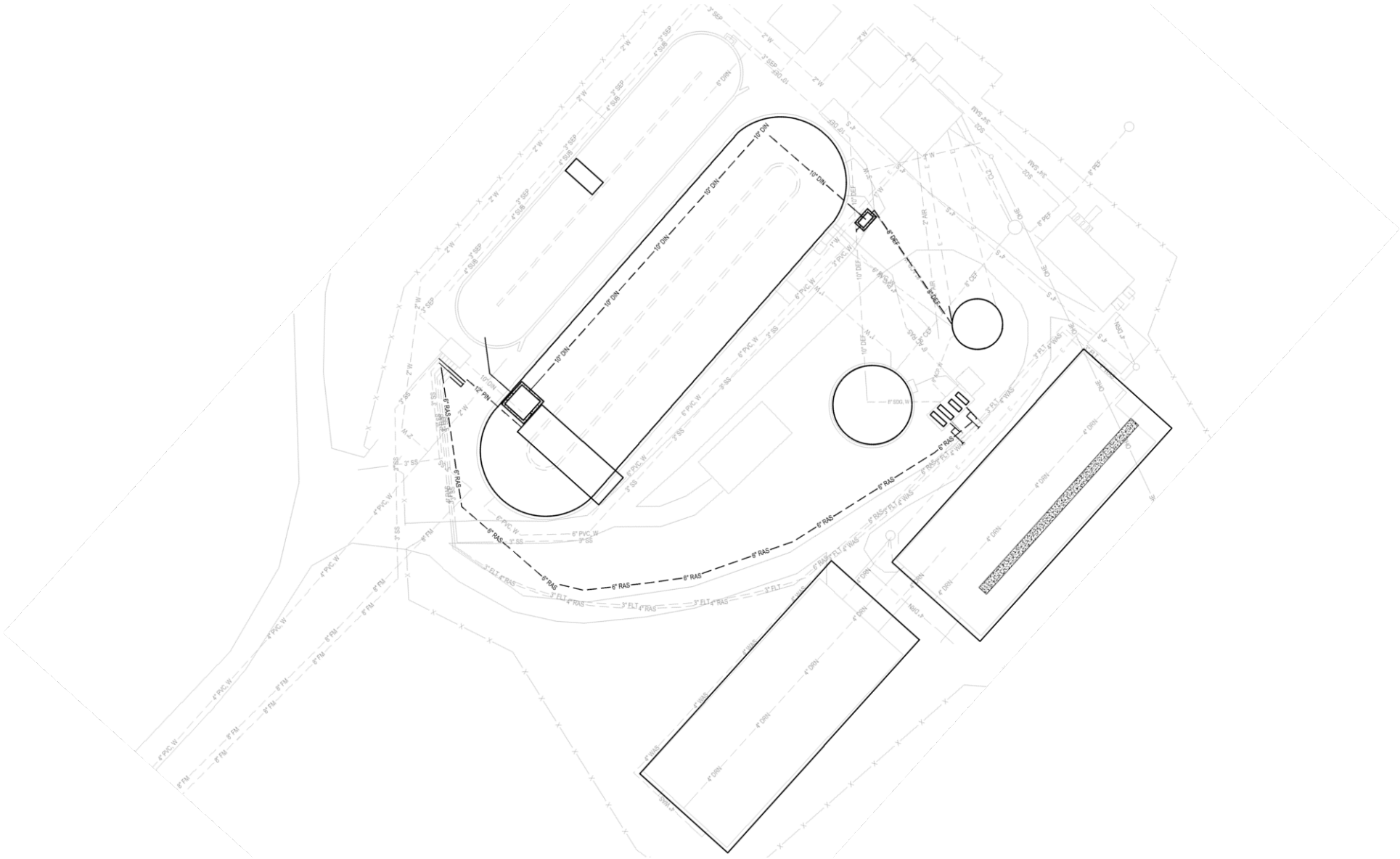
Project Components
Evergreen

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 3-4

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2003_ProjectComponentsMB_RevC
Print date: 10 Oct 2022 - 16:26

Data source: PSB, GHD, 6/17/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2



N

Redway Community Service District
Wastewater System Infrastructure Improvement Project

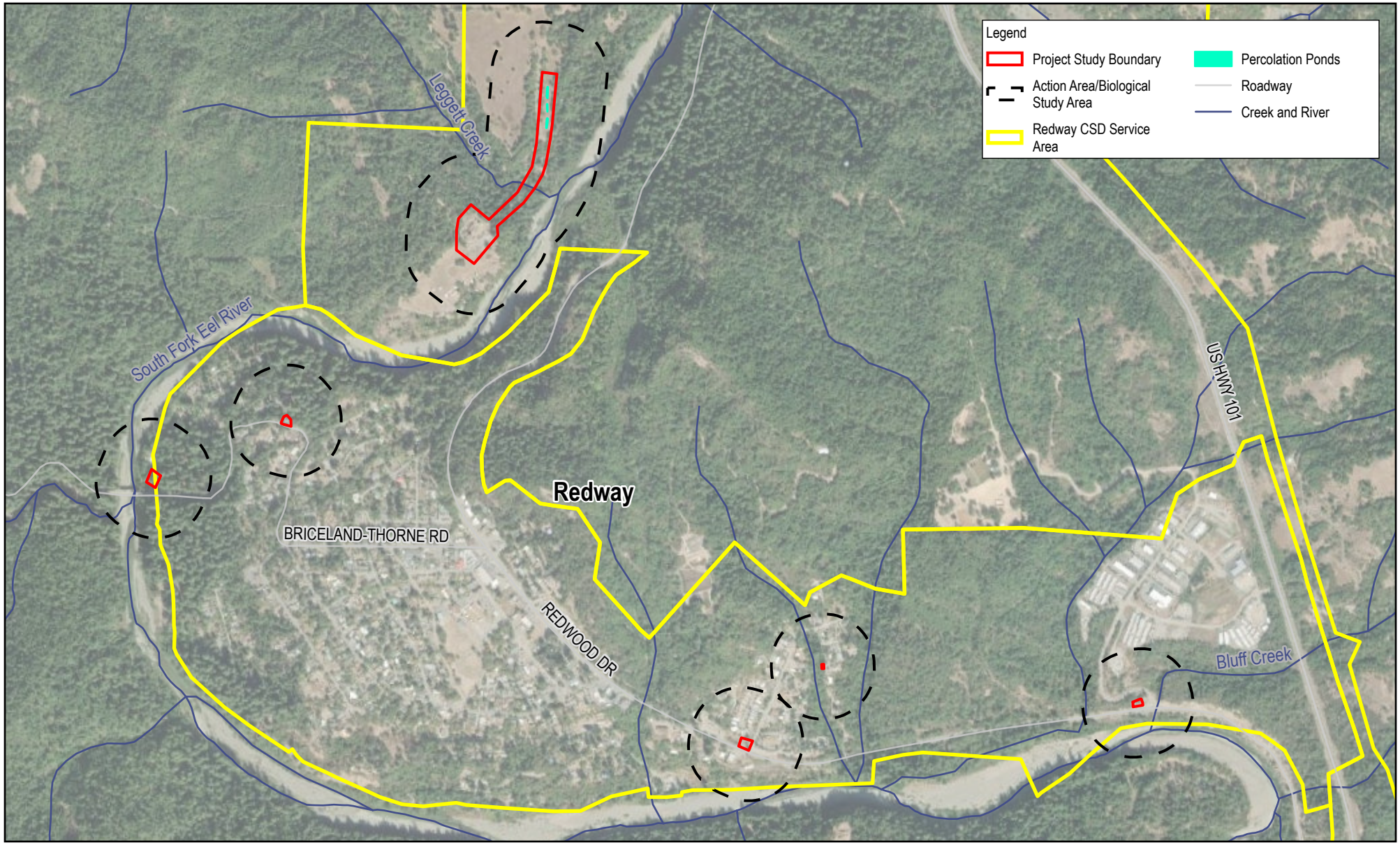
Project No. **11214230**
Revision No. **-**
Date **Oct 13, 2022**

WWTF Project Components

FIGURE 3-5

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2003-05_WWTFSiteLayout
Print date: 13 Oct 2022 - 07:23

Data source: GHD, Oct 11, 2022;World Imagery: Maxar. Created by: jclark2



Paper Size ANSI A

0 250 500 750 1,000

Feet

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

N

Redway Community Service District
Wastewater System Infrastructure Improvement Project

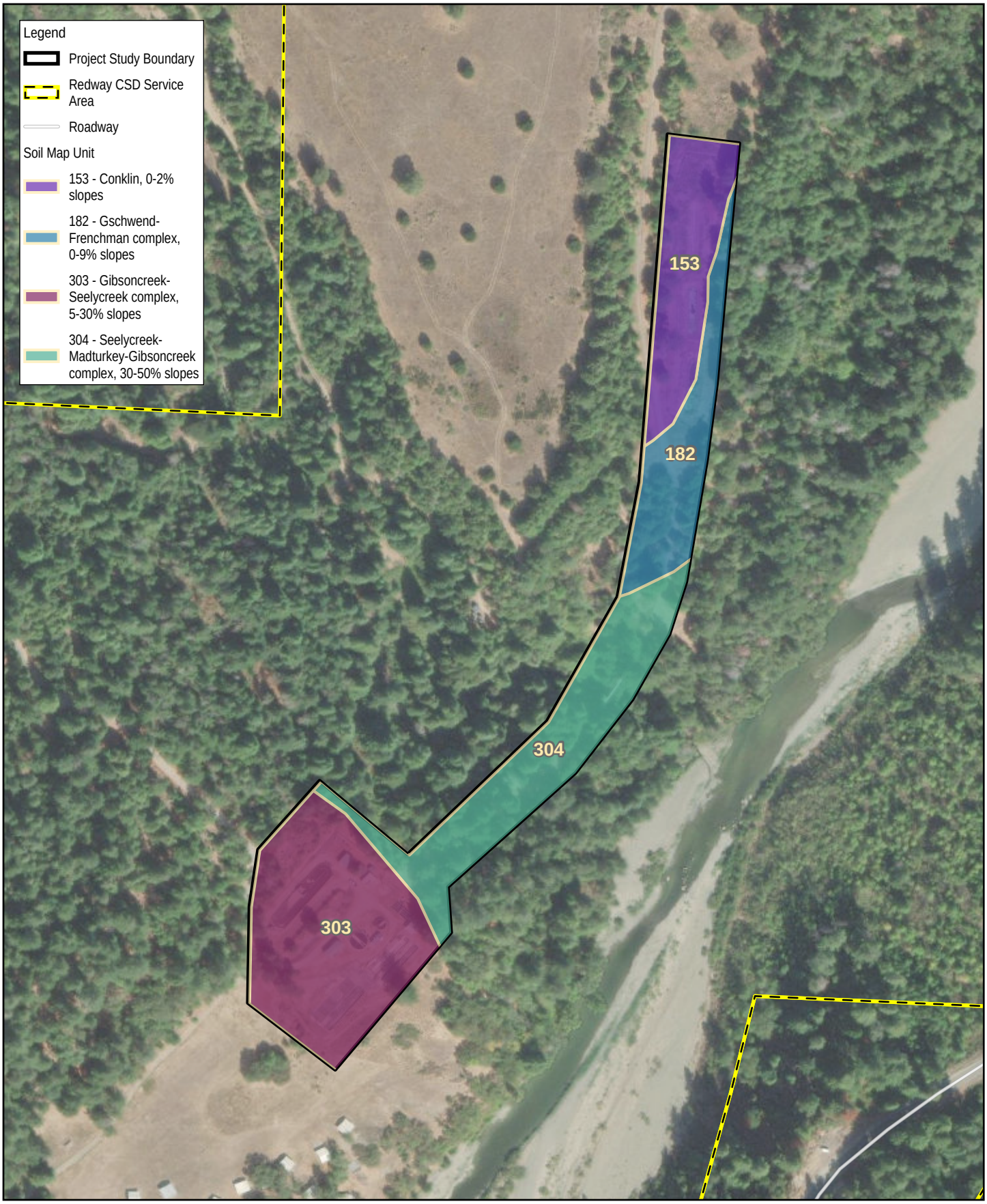
Project No. **11214230**
Revision No. **-**
Date **Oct 12, 2022**

Action Area/Biological Study Area

FIGURE 4

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2004_BSA_RevB
Print date: 12 Oct 2022 - 10:22

Data source: PSB, GHD, Sep 22 2022; BSA, Oct 10 2022; Percolation ponds, GHD, 2022; CSD boundary and roads, Humboldt county; water lines, NHD, 2020 edited by GHD 2022;World Imagery: Maxar. Created by: jclark2



Paper Size ANSI A

0 75 150 225 300

Feet

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

N

GHD

Redway Community Services District
Wastewater System Infrastructure Improvement Project

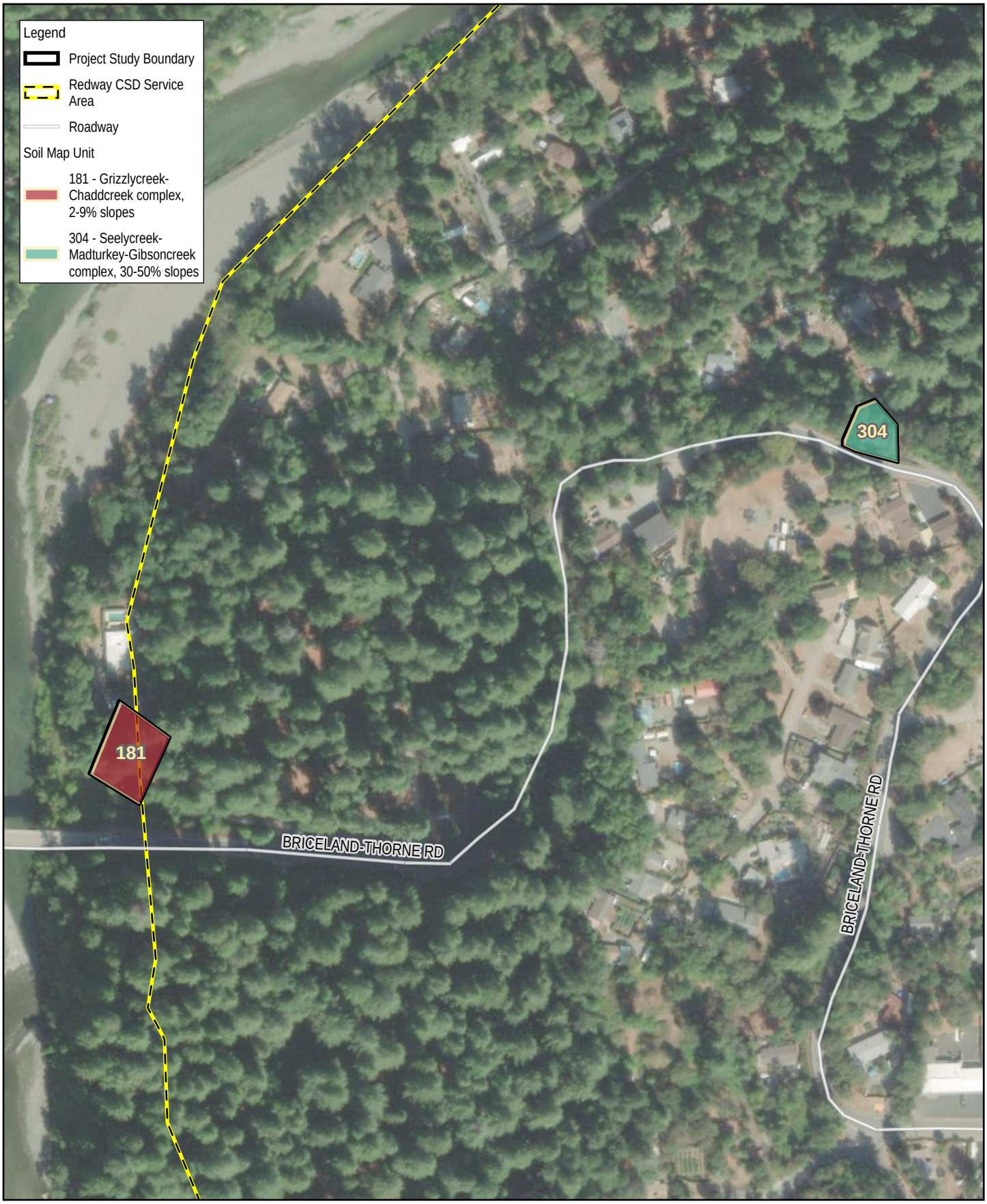
NRCS Soils

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 5-1

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2005_Soils_RevB
Print date: 10 Oct 2022 - 15:48

Data source: NRCS, accessed 6/17/2022; PSB, GHD, 9/22/2022; World Imagery: Maxar, Microsoft. Created by: jclark2



Paper Size ANSI A

0 60 120 180 240

Feet

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

N

Redway Community Services District
Wastewater System Infrastructure Improvement Project

NRCS Soils

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 5-2

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2005_Soils_RevB
Print date: 10 Oct 2022 - 15:48

Data source: NRCS, accessed 6/17/2022; PSB, GHD, 9/22/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

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

N

Redway Community Services District
Wastewater System Infrastructure Improvement Project

NRCS Soils

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 5-3

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2005_Soils_RevB
Print date: 10 Oct 2022 - 15:49

Data source: NRCS, accessed 6/17/2022; PSB, GHD, 9/22/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

Paper Size ANSI A

0 9.5 19 28.5 38

Feet

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

N

Redway Community Services District
Wastewater System Infrastructure
Improvement Project

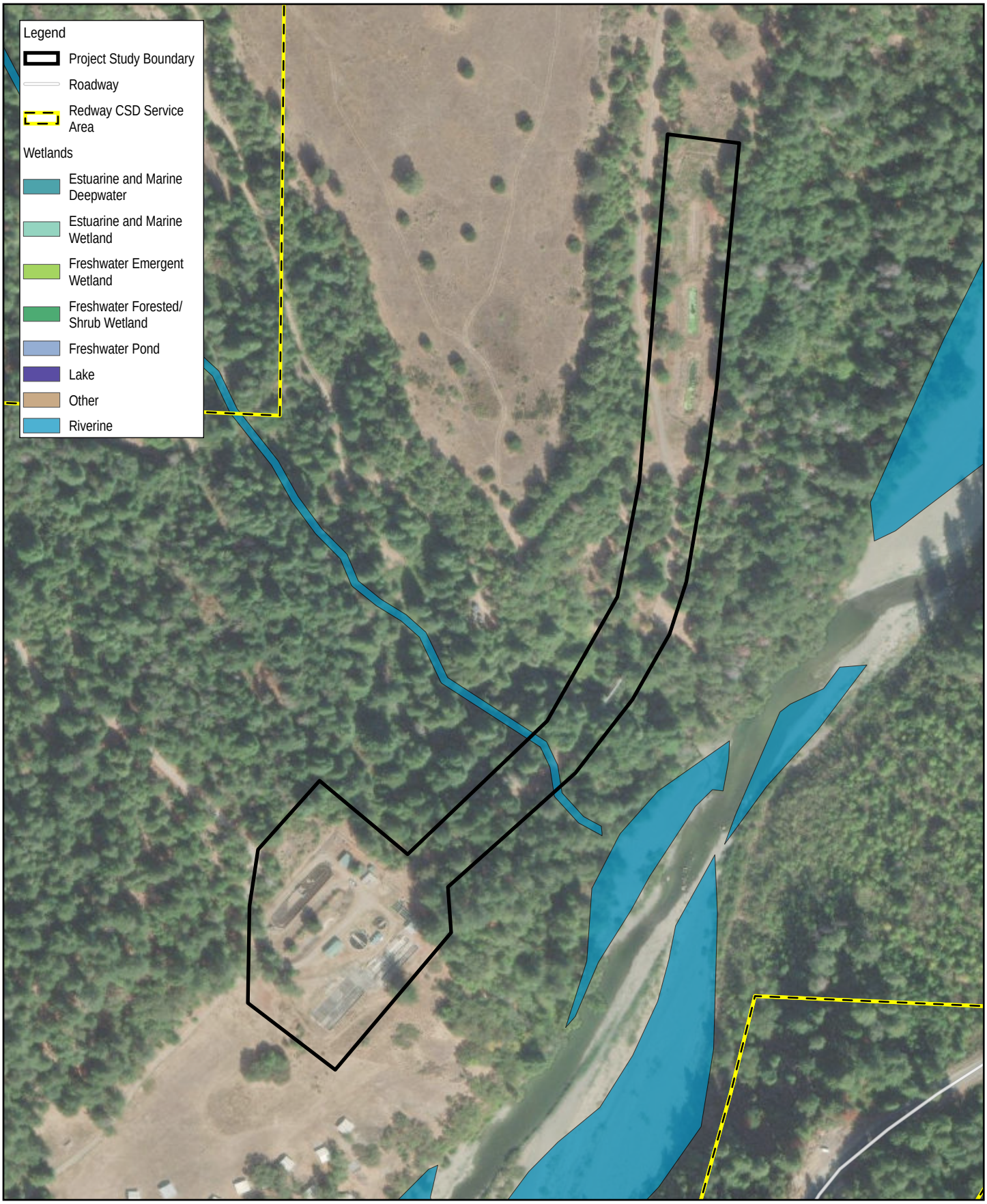
NRCS Soils

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 5-4

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2005_Soils_RevB
Print date: 10 Oct 2022 - 15:49

Data source: NRCS, accessed 6/17/2022; PSB, GHD, 9/22/2022; World Imagery: Maxar, Microsoft. Created by: jclark2



Paper Size ANSI A

0 75 150 225 300

Feet

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

N

Redway Community Services District
Wastewater System Infrastructure
Improvement Project

National Wetland Inventory

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 6-1

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2006_NWI_RevB
Print date: 10 Oct 2022 - 15:46

Data source: PSB, GHD, 9/22/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

Paper Size ANSI A

0 60 120 180 240

Feet

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

N

Redway Community Services District
Wastewater System Infrastructure
Improvement Project

National Wetland Inventory

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 6-2

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2006_NWI_RevB
Print date: 10 Oct 2022 - 15:47

Data source: PSB, GHD, 9/22/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

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

N

Redway Community Services District
Wastewater System Infrastructure
Improvement Project

National Wetland Inventory

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 6-3

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2006_NWI_RevB
Print date: 10 Oct 2022 - 15:47

Data source: PSB, GHD, 9/22/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2

Paper Size ANSI A

0 9.5 19 28.5 38

Feet

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

N

Redway Community Services District
Wastewater System Infrastructure Improvement Project

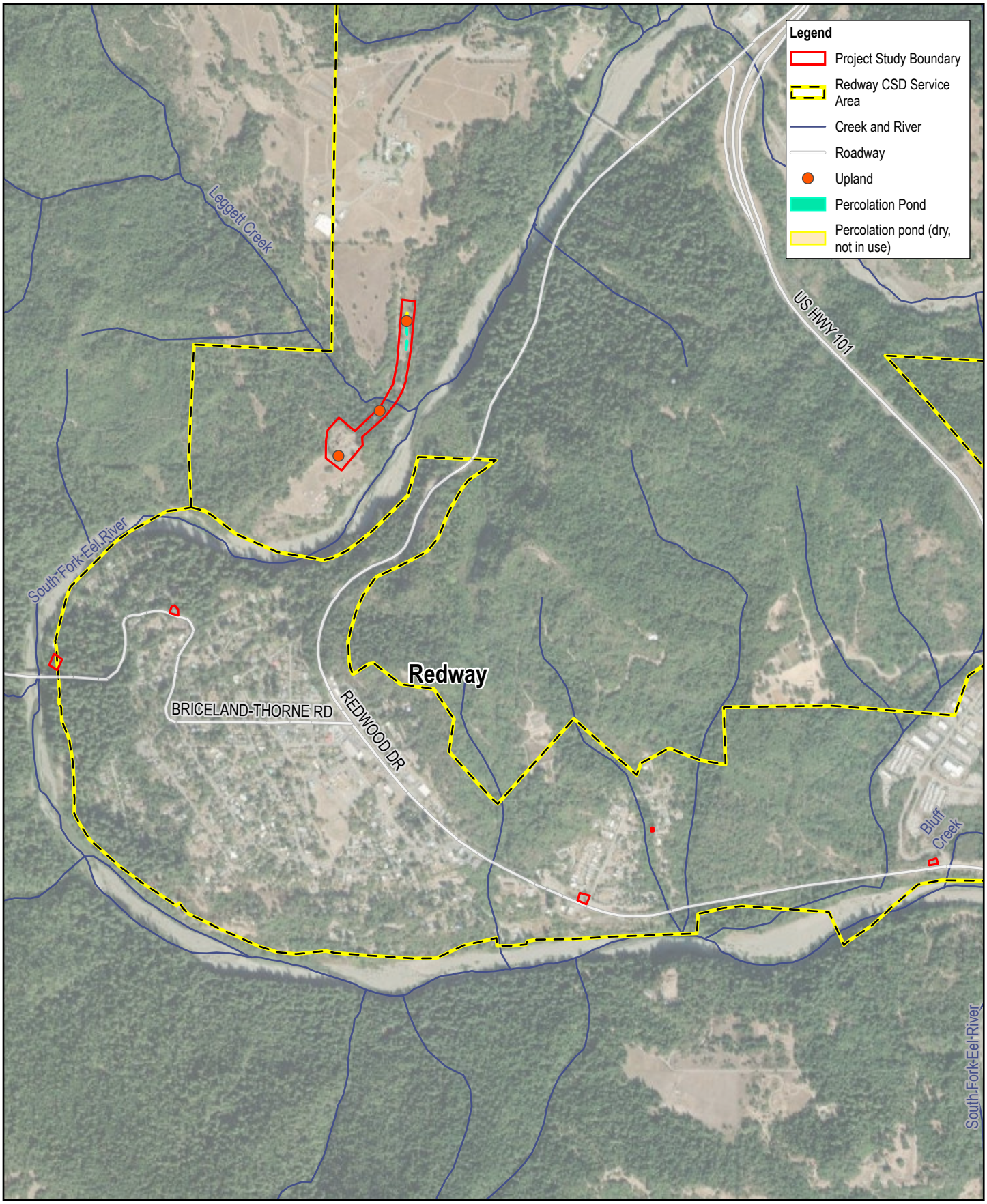
National Wetland Inventory

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 6-4

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2006_NWI_RevB
Print date: 10 Oct 2022 - 15:47

Data source: PSB, GHD, 9/22/2022; FEMA FIRM, accessed 6/17/2022; World Imagery: Maxar, Microsoft. Created by: jclark2



Paper Size ANSI A

0 410 820 1,230 1,640

Feet

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

N

Redway Community Services District Wastewater System Infrastructure Improvement Project

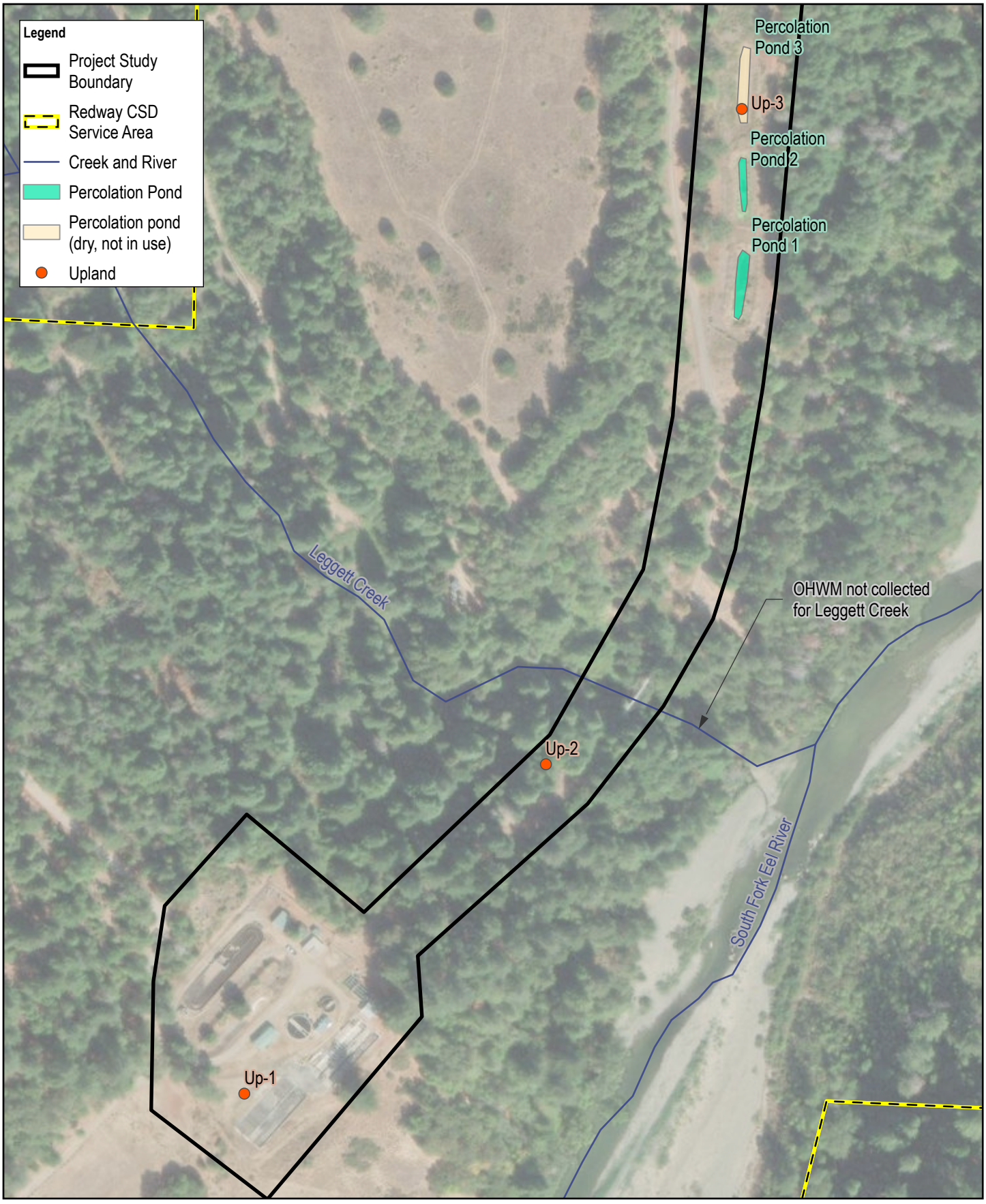
Aquatic Resources Overview

Project No. **11214230**
Revision No. **-**
Date **Oct 12, 2022**

FIGURE 7-1

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2007-01_AquaticResources
Print date: 12 Oct 2022 - 10:20

Data source: NRCS, accessed 6/17/2022; PSB, GHD, 9/22/2022; World Imagery: Maxar. Created by: jclark2



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

N

Redway Community Services District Wastewater System Infrastructure Improvement Project

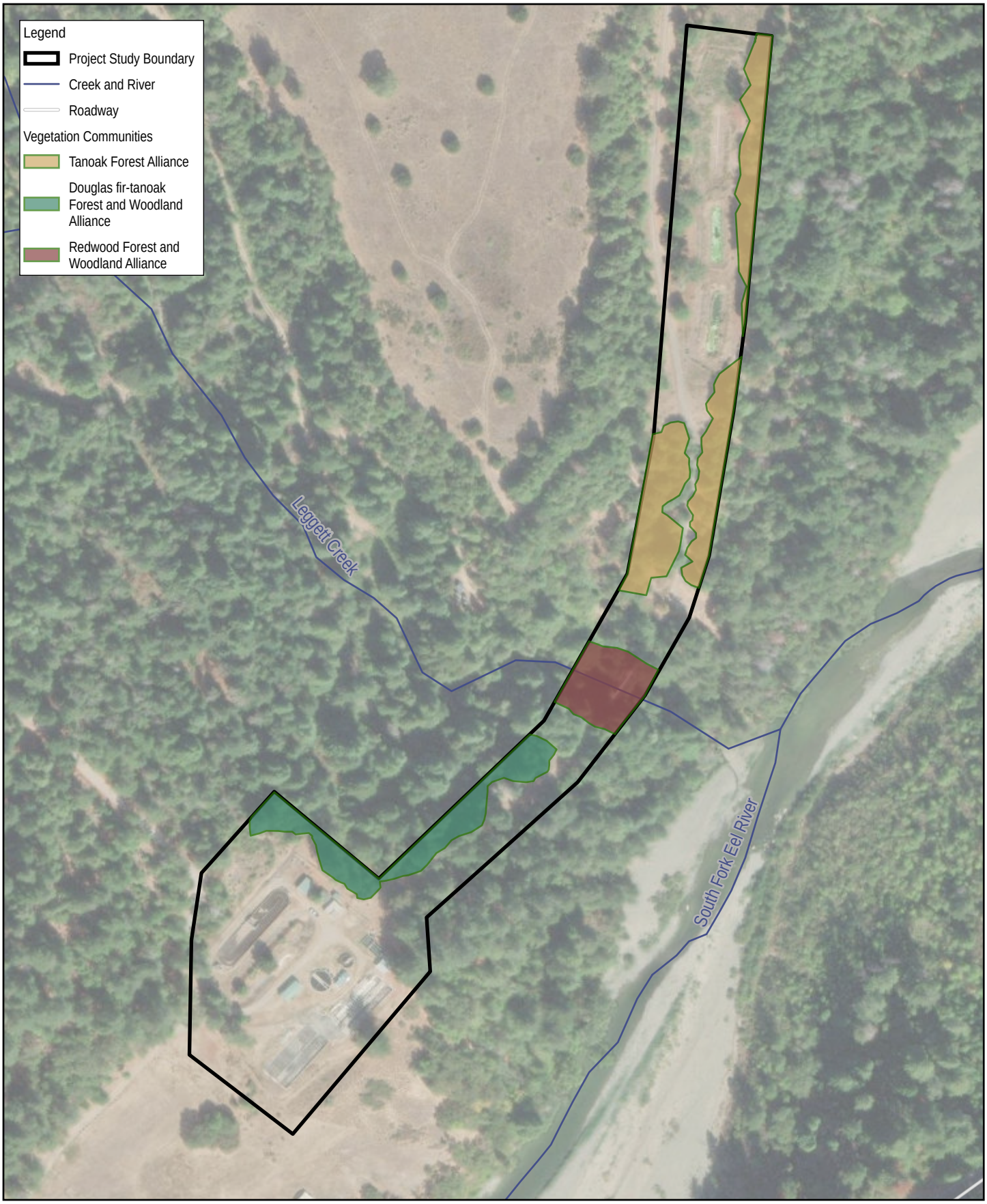
Aquatic Resources WWTF

Project No. **11214230**
Revision No. **-**
Date **Oct 12, 2022**

FIGURE 7-2

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2007-02_AquaticResources_WWTF
Print date: 12 Oct 2022 - 10:22

Data source: NRCS, accessed 6/17/2022; PSB, GHD, 9/22/2022; World Imagery: Maxar, Microsoft. Created by: jclark2



Paper Size ANSI A

0 60 120 180 240

Feet

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

N

Redway Community Services District
Wastewater System Infrastructure Improvement Project

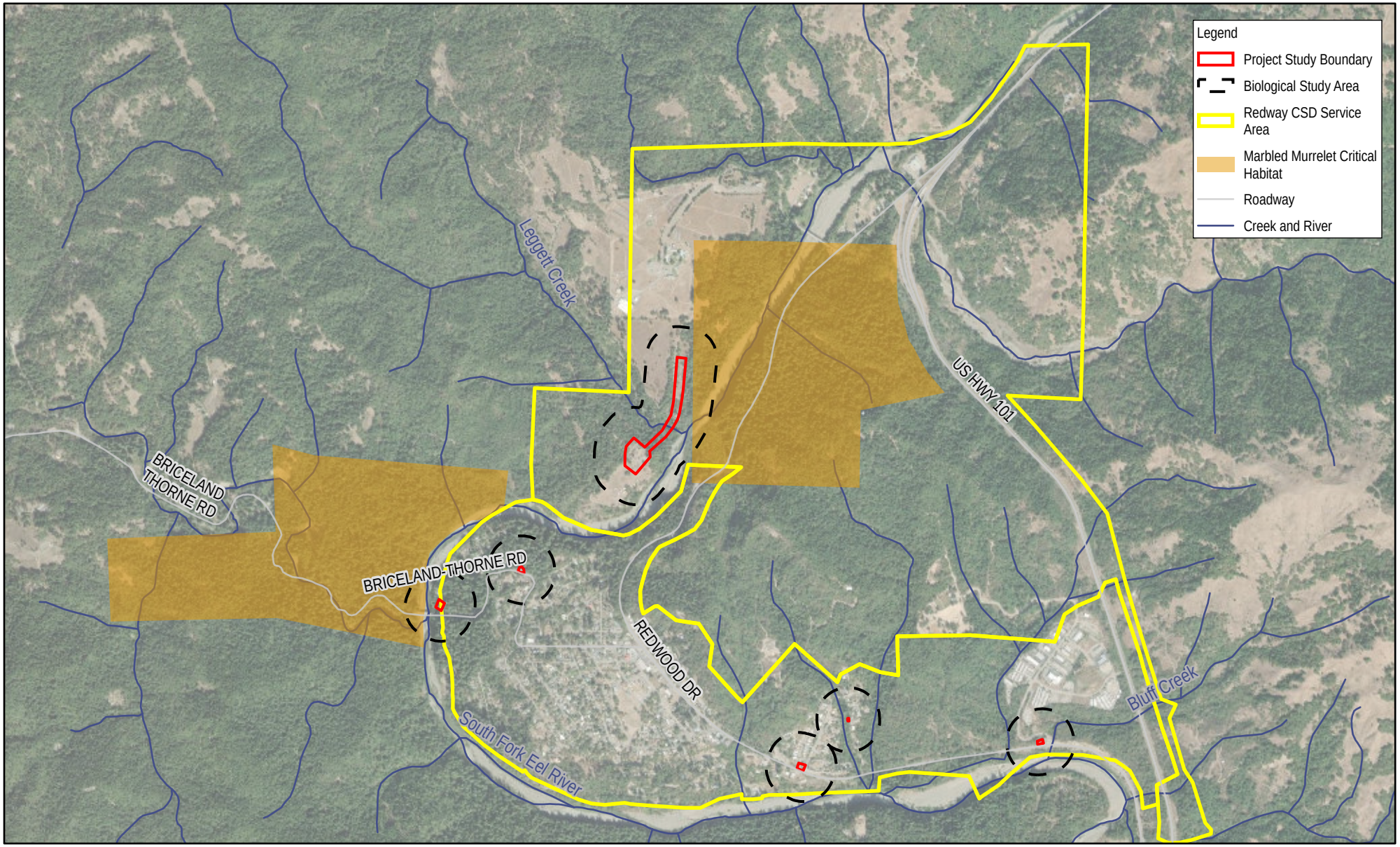
Vegetation Communities

Project No. 11214230
Revision No. -
Date Oct 10, 2022

FIGURE 8

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2008_Vegetation_RevA
Print date: 10 Oct 2022 - 15:52

Data source: Vegetation, GHD, July 2022 ; PSB, GHD, 9/22/2022; World Imagery: Maxar, Microsoft. Created by: jclark2



Paper Size ANSI A

0 250 500 750 1,000

Feet

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

N

GHD

Redway Community Service District
Wastewater System Infrastructure Improvement Project

Project No. 11214230
Revision No. -
Date Oct 10, 2022

Marbled Murrelet Critical Habitat

FIGURE 9

N:\US\Eureka\Projects\561\11214230\GIS\Maps\Deliverables\11214230_BRE.aprx - 11214230_2009_CHMarbledMurrelet_RevA
Print date: 10 Oct 2022 - 16:08

Data source: PSB, GHD, Sep 22 2022; BSA, Oct 10 2022; GHD, 2022; Marbled Murrelet Critical Habitat, USFWS, Sept 6 2022; CSD boundary and roads, Humboldt county; water lines, NHD, 2020 edited by GHD 2022; World Imagery: Maxar. Created by: jclark2

Appendix B

Site Visit Photos

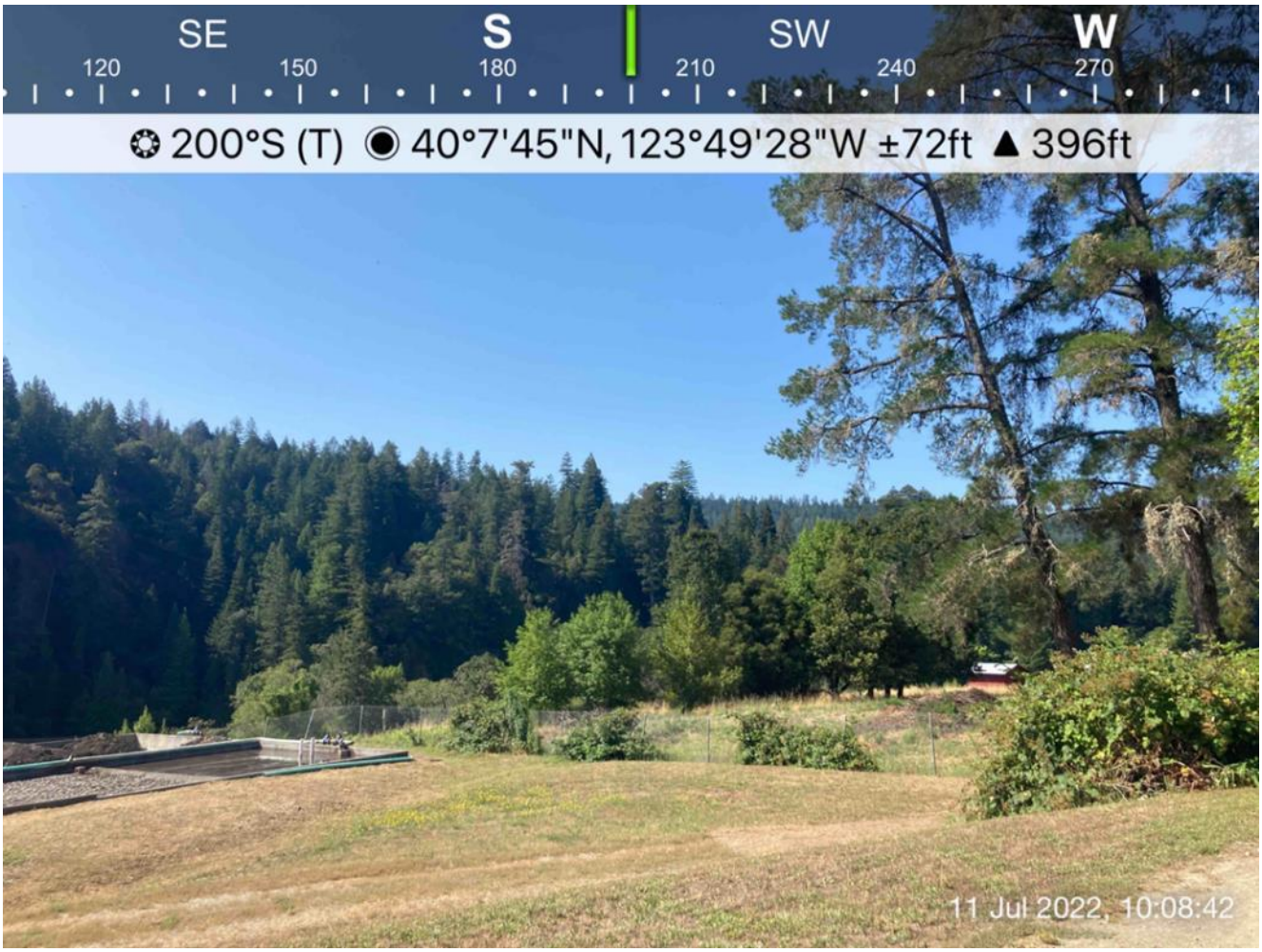


Image B1. The wastewater treatment facility (WWTF) and surrounding habitat.

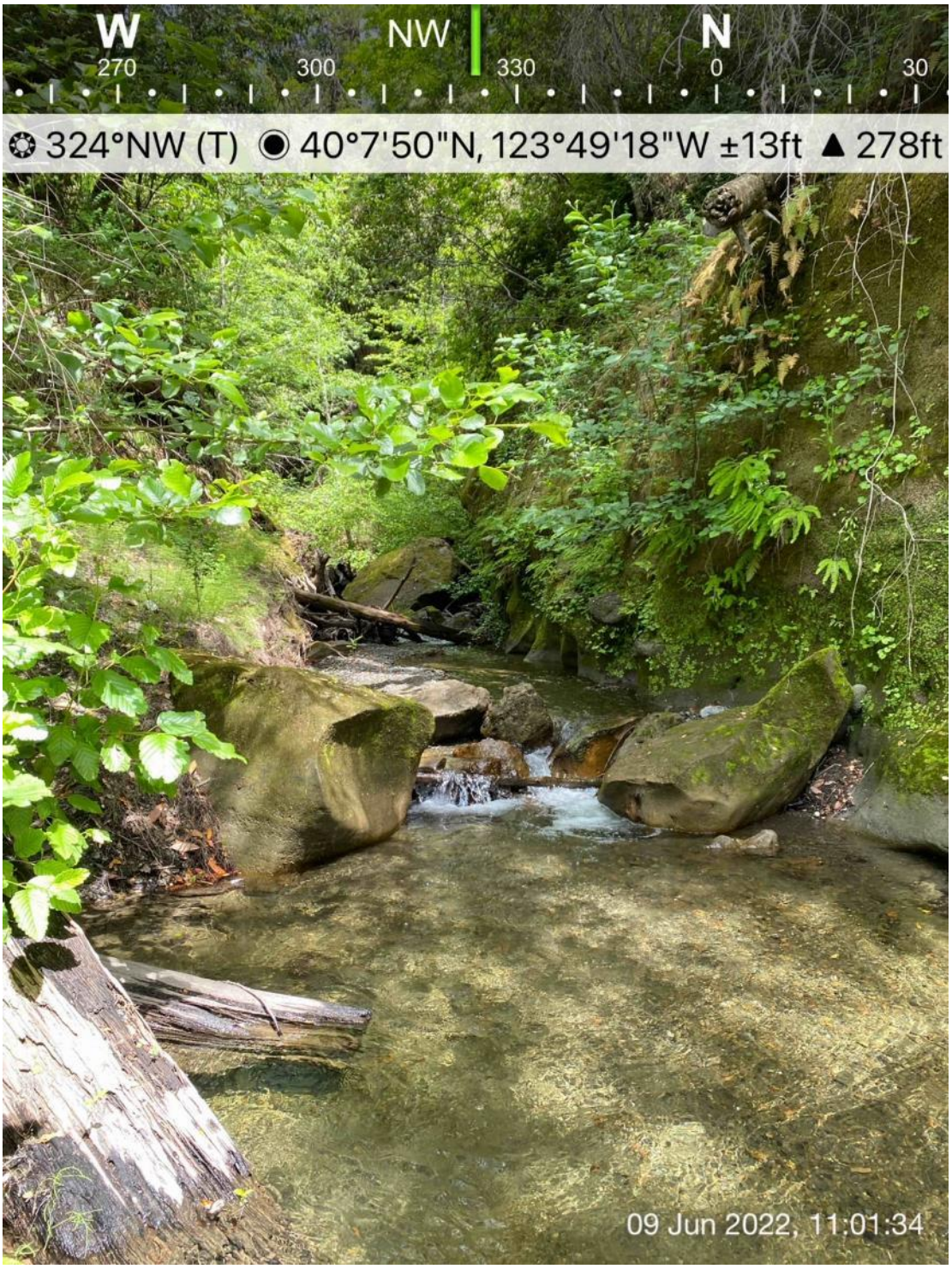


Image B2. Leggett Creek, which the effluent pipe crosses over.

Image B3. Coniferous trees and understory within the PSB. This type of habitat is adjacent to the WWTF and the SF Eel River.

Image B4. Riparian vegetation and the SF Eel River within the Action Area/BSA.

Image B5. Tan oak vegetation community within the northern section of the PSB, north of Leggett Creek.

Image B6. Tree and vegetation structure in the northern section of the PSB south of the percolation ponds, looking south.

Image B7. Percolation ponds within the northern section of the PSB.

Image B8. Example of one of the pump stations in a residential area, with established coniferous trees and understory.

Appendix C

NRCS Soils Report

Map Unit Description

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 in this report, 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, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components 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. Some minor components, however, have properties and behavior 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*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given 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.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Humboldt County, South Part, California

100—Water and Fluvents, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1l9dm
Elevation: 10 to 50 feet

Mean annual precipitation: 40 to 75 inches
Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 300 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 60 percent
Fluvents and similar soils: 35 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Landform: Rivers on channels
Down-slope shape: Concave, linear
Across-slope shape: Linear

Description of Fluvents

Setting

Landform: Point bars on channels
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, convex
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

A - 0 to 13 inches: gravelly fine sandy loam
C - 13 to 59 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: R004BK200CA - Riparian
Other vegetative classification: Riparian & Wetland Vegetation (RNPR001CA)
Hydric soil rating: Yes

Minor Components

Typic udifluvents

Percent of map unit: 4 percent
Landform: Meandering channels
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 1 percent
Landform: Channels
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

153—Conklin, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1lpqg
Elevation: 60 to 460 feet
Mean annual precipitation: 49 to 98 inches
Mean annual air temperature: 54 to 59 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Conklin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Conklin

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 7 inches: loam
A - 7 to 20 inches: sandy clay loam
Bw1 - 20 to 31 inches: sandy clay loam
Bw2 - 31 to 49 inches: loam
Bw3 - 49 to 63 inches: sandy clay loam

2C - 63 to 79 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
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 11.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R004BI200CA - Riparian
Hydric soil rating: No

Minor Components

Johnnyjack

Percent of map unit: 10 percent
Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Parkland

Percent of map unit: 3 percent
Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Grannycreek

Percent of map unit: 2 percent
Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: Yes

181—Grizzlycreek-Chaddcreek complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: v79v
Elevation: 50 to 1,100 feet
Mean annual precipitation: 40 to 70 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 330 to 365 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Grizzlycreek

Setting

Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Backslope, toeslope, footslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Concave, linear, convex
Across-slope shape: Linear, concave, convex
Parent material: Alluvium derived from mixed sedimentary sources

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A1 - 1 to 4 inches: loam
A2 - 4 to 18 inches: loam
AB - 18 to 24 inches: loam
Bw1 - 24 to 31 inches: loam
Bw2 - 31 to 47 inches: sandy clay loam
C1 - 47 to 59 inches: sandy clay loam
C2 - 59 to 79 inches: paragravelly sandy loam

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 (0.20 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 11.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F004BI103CA - Fog-influenced, cool, wet, low elevation mountain slopes and terraces
Hydric soil rating: No

Description of Chaddcreek

Setting

Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, riser, tread
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Alluvium derived from mixed sedimentary sources

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A1 - 2 to 9 inches: gravelly loam
A2 - 9 to 20 inches: gravelly loam
Bt1 - 20 to 33 inches: very gravelly loam
Bt2 - 33 to 47 inches: very gravelly loam
C1 - 47 to 55 inches: very gravelly sandy loam
C2 - 55 to 79 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 9 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: 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 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F004BI102CA - Fluventic, rarely flooded, alluvial floodplains
Hydric soil rating: No

Minor Components

Cottoneva

Percent of map unit: 5 percent

Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Eelriver

Percent of map unit: 5 percent
Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Redwoodhouse

Percent of map unit: 3 percent
Landform: Mountain slopes, benches, ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, mountaintop
Down-slope shape: Linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Yagercreek

Percent of map unit: 2 percent
Landform: Mountain slopes, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

182—Gschwend-Frenchman complex, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: 1hf8j
Elevation: 160 to 1,700 feet
Mean annual precipitation: 40 to 80 inches
Mean annual air temperature: 43 to 64 degrees F
Frost-free period: 220 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Gschwend and similar soils: 50 percent
Frenchman and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gschwend

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A1 - 1 to 3 inches: loam
A2 - 3 to 13 inches: loam
Bw - 13 to 20 inches: sandy loam
Bt - 20 to 36 inches: sandy loam
C - 36 to 62 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 0 to 9 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 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F004BK103CA - Upper slopes and higher elevation mountains
Hydric soil rating: No

Description of Frenchman

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 12 inches: very gravelly sandy loam

Bw1 - 12 to 27 inches: very gravelly sandy loam
Bw2 - 27 to 32 inches: very gravelly sandy loam
2C1 - 32 to 44 inches: extremely gravelly sand
2C2 - 44 to 64 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 9 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 6.00 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: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F004BK103CA - Upper slopes and higher elevation mountains
Hydric soil rating: No

Minor Components

Typic udifluvents

Percent of map unit: 5 percent
Landform: Meandering channels
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Fluvents, occasionally flooded

Percent of map unit: 5 percent
Landform: Flood-plain steps
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Aquic dystrustepts

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: Yes

Frenchman

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

303—Gibsoncreek-Seelycreek complex, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2fhlq
Elevation: 200 to 1,310 feet
Mean annual precipitation: 49 to 80 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Gibsoncreek

Setting

Landform: Benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from conglomerate and/or colluvium derived from sandstone and/or residuum weathered from sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 7 inches: loam
Bw1 - 7 to 18 inches: loam
Bw2 - 18 to 37 inches: gravelly loam
BC - 37 to 53 inches: paragravelly fine sandy loam
C - 53 to 63 inches: very paragravelly fine sandy loam

Properties and qualities

Slope: 5 to 30 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 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F004BJ102CA - Dry, steep mountain slopes
Hydric soil rating: No

Description of Seelycreek

Setting

Landform: Benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from siltstone and/or residuum weathered from siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 7 inches: silt loam
AB - 7 to 18 inches: silt loam
Bt1 - 18 to 33 inches: silty clay loam
Bt2 - 33 to 55 inches: silty clay loam
Bt3 - 55 to 79 inches: silt loam

Properties and qualities

Slope: 5 to 30 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: 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: Very high (about 12.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C

Ecological site: F004BK101CA - Fog-influenced, stream terraces
Hydric soil rating: No

Minor Components

Leggettcreek
Percent of map unit: 5 percent
Landform: Benches
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Gschwend
Percent of map unit: 5 percent
Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Seelycreek
Percent of map unit: 5 percent
Landform: Benches
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

304—Seelycreek-Madturkey-Gibsoncreek complex, 30 to 50 percent slopes

Map Unit Setting
National map unit symbol: 2fhlr
Elevation: 200 to 1,310 feet
Mean annual precipitation: 49 to 80 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition
Seelycreek and similar soils: 40 percent
Gibsoncreek and similar soils: 25 percent
Madturkey and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Seelycreek

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from siltstone and/or residuum weathered from siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 9 inches: silt loam
AB - 9 to 24 inches: silt loam
Bt1 - 24 to 39 inches: silt loam
Bt2 - 39 to 50 inches: silt loam
Bt3 - 50 to 67 inches: clay loam
Bt4 - 67 to 79 inches: loam

Properties and qualities

Slope: 30 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: 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 11.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F004BJ101CA - Fog-influenced, low elevation slopes and footslopes
Hydric soil rating: No

Description of Madturkey

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Colluvium derived from siltstone and/or residuum weathered from siltstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 6 inches: silt loam
AB - 6 to 17 inches: silt loam
Bt1 - 17 to 25 inches: silty clay loam
Bt2 - 25 to 31 inches: paragravelly silty clay loam
Bt3 - 31 to 51 inches: silty clay
BCt - 51 to 59 inches: silty clay loam
C - 59 to 79 inches: silty clay loam

Properties and qualities

Slope: 30 to 50 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 low to moderately high (0.06 to 0.60 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 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F004BJ101CA - Fog-influenced, low elevation slopes and footslopes
Hydric soil rating: No

Description of Gibsoncreek

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from conglomerate and/or colluvium derived from sandstone and/or residuum weathered from sandstone

Typical profile

A - 0 to 9 inches: loam
Bw1 - 9 to 22 inches: gravelly loam
Bw2 - 22 to 35 inches: gravelly sandy loam
C - 35 to 59 inches: very paragravelly sandy loam

Properties and qualities

Slope: 30 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: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F004BJ102CA - Dry, steep mountain slopes
Hydric soil rating: No

Minor Components

Leggettcreek

Percent of map unit: 5 percent
Landform: Mountain slopes, ridges
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Mountainflank, mountaintop
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Sproulish

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: Linear
Hydric soil rating: No

311—Urban land-Garberville complex, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2qds5
Elevation: 200 to 660 feet
Mean annual precipitation: 49 to 70 inches
Mean annual air temperature: 48 to 59 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent
Garberville and similar soils: 35 percent
Minor components: 15 percent

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

Description of Urban Land

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Garberville

Setting

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

Typical profile

Ap - 0 to 7 inches: loam
AB - 7 to 20 inches: loam
Bw1 - 20 to 33 inches: loam
Bw2 - 33 to 47 inches: sandy clay loam
Bw3 - 47 to 71 inches: sandy clay loam

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
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: 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 10.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R004BI202CA - Loamy Uplands
Hydric soil rating: No

Minor Components

Parkland

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Gibsoncreek

Percent of map unit: 3 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Leggettcreek

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 10, Sep 6, 2021

Map Unit Description

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 in this report, 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, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components 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. Some minor components, however, have properties and behavior 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*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given 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.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Humboldt County, South Part, California

100—Water and Fluvents, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1l9dm
Elevation: 10 to 50 feet

Mean annual precipitation: 40 to 75 inches
Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 300 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 60 percent
Fluvents and similar soils: 35 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Landform: Rivers on channels
Down-slope shape: Concave, linear
Across-slope shape: Linear

Description of Fluvents

Setting

Landform: Point bars on channels
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, convex
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

A - 0 to 13 inches: gravelly fine sandy loam
C - 13 to 59 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: R004BK200CA - Riparian
Other vegetative classification: Riparian & Wetland Vegetation (RNPR001CA)
Hydric soil rating: Yes

Minor Components

Typic udifluvents

Percent of map unit: 4 percent
Landform: Meandering channels
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 1 percent
Landform: Channels
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

153—Conklin, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1lpqg
Elevation: 60 to 460 feet
Mean annual precipitation: 49 to 98 inches
Mean annual air temperature: 54 to 59 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Conklin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Conklin

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 7 inches: loam
A - 7 to 20 inches: sandy clay loam
Bw1 - 20 to 31 inches: sandy clay loam
Bw2 - 31 to 49 inches: loam
Bw3 - 49 to 63 inches: sandy clay loam

2C - 63 to 79 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
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 11.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R004BI200CA - Riparian
Hydric soil rating: No

Minor Components

Johnnyjack

Percent of map unit: 10 percent
Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Parkland

Percent of map unit: 3 percent
Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Grannycreek

Percent of map unit: 2 percent
Landform: Alluvial fans, stream terraces
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: Yes

181—Grizzlycreek-Chaddcreek complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: v79v
Elevation: 50 to 1,100 feet
Mean annual precipitation: 40 to 70 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 330 to 365 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Grizzlycreek

Setting

Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Backslope, toeslope, footslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Concave, linear, convex
Across-slope shape: Linear, concave, convex
Parent material: Alluvium derived from mixed sedimentary sources

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A1 - 1 to 4 inches: loam
A2 - 4 to 18 inches: loam
AB - 18 to 24 inches: loam
Bw1 - 24 to 31 inches: loam
Bw2 - 31 to 47 inches: sandy clay loam
C1 - 47 to 59 inches: sandy clay loam
C2 - 59 to 79 inches: paragravelly sandy loam

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 (0.20 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 11.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F004BI103CA - Fog-influenced, cool, wet, low elevation mountain slopes and terraces
Hydric soil rating: No

Description of Chaddcreek

Setting

Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, riser, tread
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Alluvium derived from mixed sedimentary sources

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A1 - 2 to 9 inches: gravelly loam
A2 - 9 to 20 inches: gravelly loam
Bt1 - 20 to 33 inches: very gravelly loam
Bt2 - 33 to 47 inches: very gravelly loam
C1 - 47 to 55 inches: very gravelly sandy loam
C2 - 55 to 79 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 9 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: 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 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F004BI102CA - Fluventic, rarely flooded, alluvial floodplains
Hydric soil rating: No

Minor Components

Cottoneva

Percent of map unit: 5 percent

Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Eelriver

Percent of map unit: 5 percent
Landform: Flood-plain steps
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Redwoodhouse

Percent of map unit: 3 percent
Landform: Mountain slopes, benches, ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, mountaintop
Down-slope shape: Linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Yagercreek

Percent of map unit: 2 percent
Landform: Mountain slopes, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

182—Gschwend-Frenchman complex, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: 1hf8j
Elevation: 160 to 1,700 feet
Mean annual precipitation: 40 to 80 inches
Mean annual air temperature: 43 to 64 degrees F
Frost-free period: 220 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Gschwend and similar soils: 50 percent
Frenchman and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gschwend

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A1 - 1 to 3 inches: loam
A2 - 3 to 13 inches: loam
Bw - 13 to 20 inches: sandy loam
Bt - 20 to 36 inches: sandy loam
C - 36 to 62 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 0 to 9 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 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F004BK103CA - Upper slopes and higher elevation mountains
Hydric soil rating: No

Description of Frenchman

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 12 inches: very gravelly sandy loam

Bw1 - 12 to 27 inches: very gravelly sandy loam
Bw2 - 27 to 32 inches: very gravelly sandy loam
2C1 - 32 to 44 inches: extremely gravelly sand
2C2 - 44 to 64 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 9 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 6.00 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: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F004BK103CA - Upper slopes and higher elevation mountains
Hydric soil rating: No

Minor Components

Typic udifluvents

Percent of map unit: 5 percent
Landform: Meandering channels
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Fluvents, occasionally flooded

Percent of map unit: 5 percent
Landform: Flood-plain steps
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Aquic dystrustepts

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: Yes

Frenchman

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

303—Gibsoncreek-Seelycreek complex, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2fhlq
Elevation: 200 to 1,310 feet
Mean annual precipitation: 49 to 80 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Gibsoncreek

Setting

Landform: Benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from conglomerate and/or colluvium derived from sandstone and/or residuum weathered from sandstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 7 inches: loam
Bw1 - 7 to 18 inches: loam
Bw2 - 18 to 37 inches: gravelly loam
BC - 37 to 53 inches: paragravelly fine sandy loam
C - 53 to 63 inches: very paragravelly fine sandy loam

Properties and qualities

Slope: 5 to 30 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 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F004BJ102CA - Dry, steep mountain slopes
Hydric soil rating: No

Description of Seelycreek

Setting

Landform: Benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from siltstone and/or residuum weathered from siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 7 inches: silt loam
AB - 7 to 18 inches: silt loam
Bt1 - 18 to 33 inches: silty clay loam
Bt2 - 33 to 55 inches: silty clay loam
Bt3 - 55 to 79 inches: silt loam

Properties and qualities

Slope: 5 to 30 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: 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: Very high (about 12.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C

Ecological site: F004BK101CA - Fog-influenced, stream terraces
Hydric soil rating: No

Minor Components

Leggettcreek
Percent of map unit: 5 percent
Landform: Benches
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Gschwend
Percent of map unit: 5 percent
Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Seelycreek
Percent of map unit: 5 percent
Landform: Benches
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

304—Seelycreek-Madturkey-Gibsoncreek complex, 30 to 50 percent slopes

Map Unit Setting
National map unit symbol: 2fhlr
Elevation: 200 to 1,310 feet
Mean annual precipitation: 49 to 80 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition
Seelycreek and similar soils: 40 percent
Gibsoncreek and similar soils: 25 percent
Madturkey and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Seelycreek

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from siltstone and/or residuum weathered from siltstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 9 inches: silt loam
AB - 9 to 24 inches: silt loam
Bt1 - 24 to 39 inches: silt loam
Bt2 - 39 to 50 inches: silt loam
Bt3 - 50 to 67 inches: clay loam
Bt4 - 67 to 79 inches: loam

Properties and qualities

Slope: 30 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: 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 11.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F004BJ101CA - Fog-influenced, low elevation slopes and footslopes
Hydric soil rating: No

Description of Madturkey

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Colluvium derived from siltstone and/or residuum weathered from siltstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 6 inches: silt loam
AB - 6 to 17 inches: silt loam
Bt1 - 17 to 25 inches: silty clay loam
Bt2 - 25 to 31 inches: paragravelly silty clay loam
Bt3 - 31 to 51 inches: silty clay
BCt - 51 to 59 inches: silty clay loam
C - 59 to 79 inches: silty clay loam

Properties and qualities

Slope: 30 to 50 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 low to moderately high (0.06 to 0.60 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 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F004BJ101CA - Fog-influenced, low elevation slopes and footslopes
Hydric soil rating: No

Description of Gibsoncreek

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from conglomerate and/or colluvium derived from sandstone and/or residuum weathered from sandstone

Typical profile

A - 0 to 9 inches: loam
Bw1 - 9 to 22 inches: gravelly loam
Bw2 - 22 to 35 inches: gravelly sandy loam
C - 35 to 59 inches: very paragravelly sandy loam

Properties and qualities

Slope: 30 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: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: F004BJ102CA - Dry, steep mountain slopes
Hydric soil rating: No

Minor Components

Leggettcreek

Percent of map unit: 5 percent
Landform: Mountain slopes, ridges
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Mountainflank, mountaintop
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Sproulish

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: Linear
Hydric soil rating: No

311—Urban land-Garberville complex, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2qds5
Elevation: 200 to 660 feet
Mean annual precipitation: 49 to 70 inches
Mean annual air temperature: 48 to 59 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 50 percent
Garberville and similar soils: 35 percent
Minor components: 15 percent

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

Description of Urban Land

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Garberville

Setting

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

Typical profile

Ap - 0 to 7 inches: loam
AB - 7 to 20 inches: loam
Bw1 - 20 to 33 inches: loam
Bw2 - 33 to 47 inches: sandy clay loam
Bw3 - 47 to 71 inches: sandy clay loam

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
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: 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 10.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R004BI202CA - Loamy Uplands
Hydric soil rating: No

Minor Components

Parkland

Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Gibsoncreek

Percent of map unit: 3 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Leggettcreek

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 10, Sep 6, 2021

Appendix D

Database Search Results

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
Phone: (707) 822-7201 Fax: (707) 822-8411

In Reply Refer To:
Project Code: 2022-0058595
Project Name: Redway CSD 11214230

June 28, 2022

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

To Whom It May Concern:

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

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

Project Summary

Project Code: 2022-0058595
Event Code: None
Project Name: Redway CSD 11214230
Project Type: Wastewater Facility - Maintenance / Modification
Project Description: Effluent pipe replacement and communication technology improvements at a wastewater treatment plant.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.131224950000004,-123.82227460242342,14z

Counties: Humboldt County, California

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Pacific Marten, Coastal Distinct Population Segment *Martes caurina* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/9081	Threatened

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* https://ecos.fws.gov/ecp/species/4467#crithab	Final

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird *Selasphorus sasin* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Sep 30

NAME	BREEDING SEASON
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Oak Titmouse *Baeolophus inornatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Rufous Hummingbird *selasphorus rufus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15
Wrentit *Chamaea fasciata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

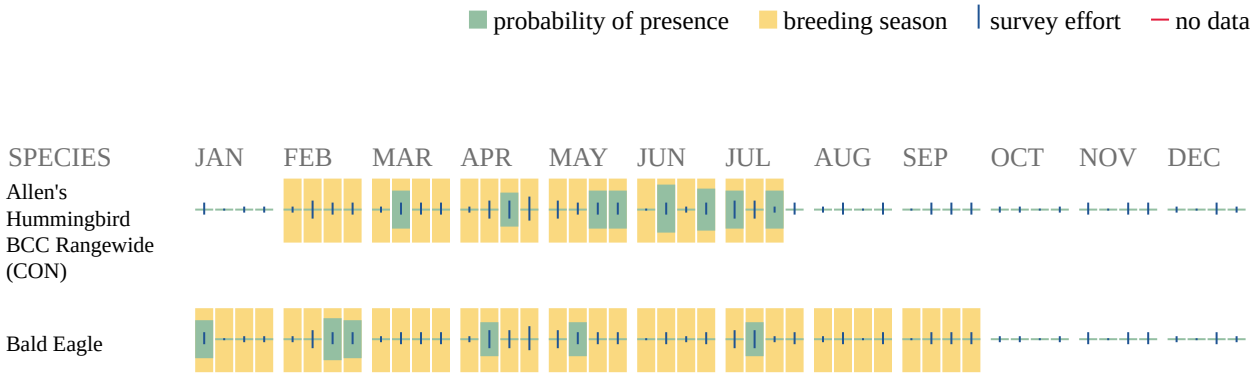
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

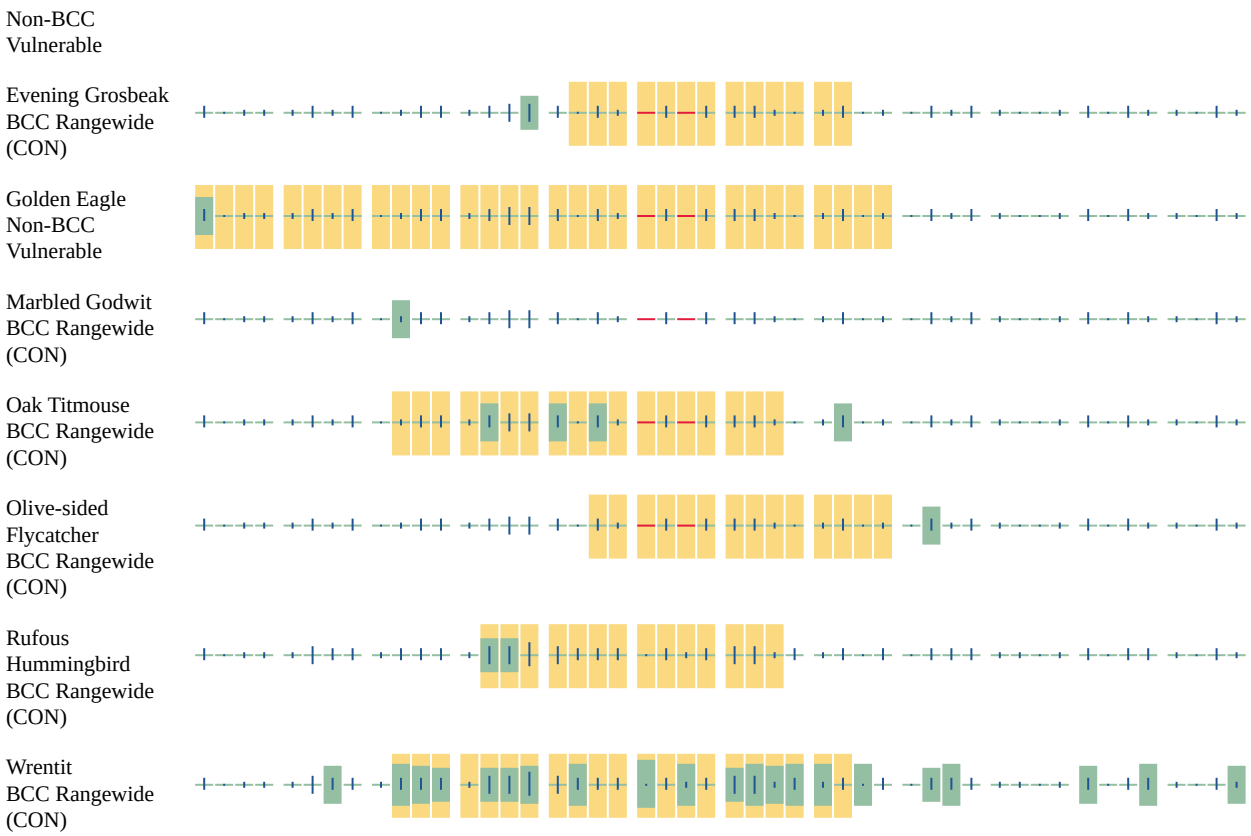
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell

me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPaC User Contact Information

Agency: GHD
Name: Sara Moriarty-Graves
Address: 718 3rd Street
City: Eureka
State: CA
Zip: 95501
Email sara.moriarty-graves@ghd.com
Phone: 7072983909

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office
Alaska Regional Office

Query Results

Degrees, Minutes, Seconds: Latitude = 40º 7' 48" N, Longitude = 124º 10' 40" W
Decimal Degrees: Latitude = 40.130, Longitude = -123.822

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

EFH

No Essential Fish Habitats (EFH) were identified at the report location.

Salmon EFH

Link	HUC Name	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
	South Fork Eel	Chinook Salmon, Coho Salmon	All	Pacific	Pacific Coast Salmon Plan

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Pacific Coastal Pelagic Species,
Jack Mackerel,
Pacific (Chub) Mackerel,
Pacific Sardine,
Northern Anchovy - Central Subpopulation,
Northern Anchovy - Northern Subpopulation,
Pacific Highly Migratory Species,
Bigeye Thresher Shark - North Pacific,
Bluefin Tuna - Pacific,
Dolphinfish (Dorado or Mahimahi) - Pacific,
Pelagic Thresher Shark - North Pacific,
Swordfish - North Pacific

CNDDB 9-Quad Species List 224 records.

Element Type	Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Quad Code	Quad Name	Data Status	Taxonomic Sort
Animals - Amphibians	Ascaphus truei	Pacific tailed frog	AAABA01010	None	None	SSC	-	4012338	WEOTT	Mapped	Animals - Amphibians - Ascaphidae - Ascaphus truei
Animals - Amphibians	Ascaphus truei	Pacific tailed frog	AAABA01010	None	None	SSC	-	4012317	GARBERVILLE	Unprocessed	Animals - Amphibians - Ascaphidae - Ascaphus truei
Animals - Amphibians	Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC	-	4012338	WEOTT	Mapped	Animals - Amphibians - Ranidae - Rana aurora
Animals - Amphibians	Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC	-	4012337	MYERS FLAT	Mapped	Animals - Amphibians - Ranidae - Rana aurora
Animals - Amphibians	Rana aurora	northern red-legged frog	AAABH01021	None	None	SSC	-	4012336	BLOCKSBURG	Unprocessed	Animals - Amphibians - Ranidae - Rana aurora
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012336	BLOCKSBURG	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012328	ETTERSBURG	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012327	MIRANDA	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012326	FORT SEWARD	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012337	MYERS FLAT	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012338	WEOTT	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012317	GARBERVILLE	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012318	BRICELAND	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	4012316	HARRIS	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC	-	4012318	BRICELAND	Mapped and Unprocessed	Animals - Amphibians - Rhyacotritonidae - Rhyacotriton variegatus
Animals - Amphibians	Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC	-	4012338	WEOTT	Mapped and Unprocessed	Animals - Amphibians - Rhyacotritonidae - Rhyacotriton variegatus
Animals - Amphibians	Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC	-	4012337	MYERS FLAT	Mapped	Animals - Amphibians - Rhyacotritonidae - Rhyacotriton variegatus
Animals - Amphibians	Rhyacotriton variegatus	southern torrent salamander	AAAAJ01020	None	None	SSC	-	4012328	ETTERSBURG	Mapped	Animals - Amphibians - Rhyacotritonidae - Rhyacotriton variegatus

Animals - Amphibians	Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC	-	4012328	ETTERSBURG	Mapped	Animals - Amphibians - Salamandridae - Taricha rivularis
Animals - Amphibians	Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC	-	4012318	BRICELAND	Mapped	Animals - Amphibians - Salamandridae - Taricha rivularis
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	4012327	MIRANDA	Mapped	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	4012337	MYERS FLAT	Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter gentilis	northern goshawk	ABNKC12060	None	None	SSC	-	4012336	BLOCKSBURG	Unprocessed	Animals - Birds - Accipitridae - Accipiter gentilis
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	4012327	MIRANDA	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	4012337	MYERS FLAT	Mapped	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	4012317	GARBERVILLE	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Brachyramphus marmoratus	marbled murrelet	ABNNN06010	Threatened	Endangered	-	-	4012338	WEOTT	Mapped and Unprocessed	Animals - Birds - Alcidae - Brachyramphus marmoratus
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	4012338	WEOTT	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	4012327	MIRANDA	Mapped	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC	-	4012337	MYERS FLAT	Unprocessed	Animals - Birds - Icteriidae - Icteria virens
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	4012337	MYERS FLAT	Mapped and Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	4012338	WEOTT	Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	4012336	BLOCKSBURG	Mapped	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	4012327	MIRANDA	Mapped and Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus

Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	4012317	GARBERVILLE	Mapped and Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC	-	4012337	MYERS FLAT	Unprocessed	Animals - Birds - Parulidae - Setophaga petechia
Animals - Birds	Psiloscops flammeolus	flammulated owl	ABNSB01020	None	None	-	-	4012327	MIRANDA	Unprocessed	Animals - Birds - Strigidae - Psiloscops flammeolus
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012316	HARRIS	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012317	GARBERVILLE	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012318	BRICELAND	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012326	FORT SEWARD	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012327	MIRANDA	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012328	ETTERSBURG	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012336	BLOCKSBURG	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012337	MYERS FLAT	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	4012338	WEOTT	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Empidonax traillii brewsteri	little willow flycatcher	ABPAE33041	None	Endangered	-	-	4012327	MIRANDA	Mapped	Animals - Birds - Tyrannidae - Empidonax traillii brewsteri
Animals - Crustaceans	Pacifastacus leniusculus klamathensis	Klamath crayfish	ICMAL31042	None	None	-	-	4012318	BRICELAND	Unprocessed	Animals - Crustaceans - Astacidae - Pacifastacus leniusculus klamathensis
Animals - Crustaceans	Pacifastacus leniusculus klamathensis	Klamath crayfish	ICMAL31042	None	None	-	-	4012317	GARBERVILLE	Unprocessed	Animals - Crustaceans - Astacidae - Pacifastacus leniusculus klamathensis

Animals - Fish	Acipenser medirostris pop. 2	green sturgeon - northern DPS	AFCAA01032	None	None	SSC	-	4012317	GARBERVILLE	Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris pop. 2
Animals - Fish	Acipenser medirostris pop. 2	green sturgeon - northern DPS	AFCAA01032	None	None	SSC	-	4012326	FORT SEWARD	Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris pop. 2
Animals - Fish	Acipenser medirostris pop. 2	green sturgeon - northern DPS	AFCAA01032	None	None	SSC	-	4012336	BLOCKSBURG	Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris pop. 2
Animals - Fish	Acipenser medirostris pop. 2	green sturgeon - northern DPS	AFCAA01032	None	None	SSC	-	4012338	WEOTT	Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris pop. 2
Animals - Fish	Acipenser medirostris pop. 2	green sturgeon - northern DPS	AFCAA01032	None	None	SSC	-	4012337	MYERS FLAT	Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris pop. 2
Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	4012338	WEOTT	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	4012317	GARBERVILLE	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-	-	4012317	GARBERVILLE	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 2
Animals - Fish	Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-	-	4012318	BRICELAND	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 2
Animals - Fish	Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-	-	4012316	HARRIS	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 2
Animals - Fish	Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-	-	4012338	WEOTT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 2
Animals - Fish	Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-	-	4012337	MYERS FLAT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 2
Animals - Fish	Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-	-	4012328	ETTERSBURG	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 2

Animals - Fish	Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-	-	4012327	MIRANDA	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 2
Animals - Fish	Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	AFCHA0209Q	Threatened	None	-	-	4012327	MIRANDA	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 16
Animals - Fish	Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	AFCHA0209Q	Threatened	None	-	-	4012326	FORT SEWARD	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 16
Animals - Fish	Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	AFCHA0209Q	Threatened	None	-	-	4012328	ETTERSBURG	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 16
Animals - Fish	Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	AFCHA0209Q	Threatened	None	-	-	4012336	BLOCKSBURG	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 16
Animals - Fish	Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	AFCHA0209Q	Threatened	None	-	-	4012337	MYERS FLAT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 16
Animals - Fish	Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	AFCHA0209Q	Threatened	None	-	-	4012338	WEOTT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 16
Animals - Fish	Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	AFCHA0209Q	Threatened	None	-	-	4012318	BRICELAND	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 16
Animals - Fish	Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	AFCHA0209Q	Threatened	None	-	-	4012317	GARBERVILLE	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 16
Animals - Fish	Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	AFCHA0213B	None	Candidate Endangered	SSC	-	4012318	BRICELAND	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 36
Animals - Fish	Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	AFCHA0213B	None	Candidate Endangered	SSC	-	4012338	WEOTT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 36
Animals - Fish	Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	AFCHA0213B	None	Candidate Endangered	SSC	-	4012336	BLOCKSBURG	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 36
Animals - Fish	Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	AFCHA0213B	None	Candidate Endangered	SSC	-	4012328	ETTERSBURG	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 36

Animals - Fish	Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	AFCHA0213B	None	Candidate Endangered	SSC	-	4012326	FORT SEWARD	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 36
Animals - Fish	Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	-	-	4012327	MIRANDA	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 17
Animals - Fish	Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	-	-	4012338	WEOTT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 17
Animals - Fish	Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	-	-	4012337	MYERS FLAT	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 17
Animals - Fish	Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	-	-	4012318	BRICELAND	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 17
Animals - Fish	Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	AFCHA0205S	Threatened	None	-	-	4012317	GARBERVILLE	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 17
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	4012318	BRICELAND	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	4012317	GARBERVILLE	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	4012338	WEOTT	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	4012337	MYERS FLAT	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	4012327	MIRANDA	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	4012326	FORT SEWARD	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	4012336	BLOCKSBURG	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	4012337	MYERS FLAT	Mapped	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	4012326	FORT SEWARD	Mapped	Animals - Insects - Apidae - Bombus occidentalis

Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	4012338	WEOTT	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	4012317	GARBERVILLE	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	4012318	BRICELAND	Mapped	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	4012327	MIRANDA	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Mammals	Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC	-	4012318	BRICELAND	Mapped and Unprocessed	Animals - Mammals - Cricetidae - Arborimus pomo
Animals - Mammals	Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC	-	4012317	GARBERVILLE	Unprocessed	Animals - Mammals - Cricetidae - Arborimus pomo
Animals - Mammals	Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC	-	4012316	HARRIS	Unprocessed	Animals - Mammals - Cricetidae - Arborimus pomo
Animals - Mammals	Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC	-	4012337	MYERS FLAT	Unprocessed	Animals - Mammals - Cricetidae - Arborimus pomo
Animals - Mammals	Arborimus pomo	Sonoma tree vole	AMAFF23030	None	None	SSC	-	4012338	WEOTT	Mapped and Unprocessed	Animals - Mammals - Cricetidae - Arborimus pomo
Animals - Mammals	Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-	-	4012338	WEOTT	Unprocessed	Animals - Mammals - Erethizontidae - Erethizon dorsatum
Animals - Mammals	Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-	-	4012327	MIRANDA	Mapped	Animals - Mammals - Erethizontidae - Erethizon dorsatum
Animals - Mammals	Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-	-	4012328	ETTERSBURG	Unprocessed	Animals - Mammals - Erethizontidae - Erethizon dorsatum
Animals - Mammals	Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-	-	4012316	HARRIS	Mapped and Unprocessed	Animals - Mammals - Erethizontidae - Erethizon dorsatum
Animals - Mammals	Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-	-	4012317	GARBERVILLE	Mapped and Unprocessed	Animals - Mammals - Erethizontidae - Erethizon dorsatum
Animals - Mammals	Martes caurina humboldtensis	Humboldt marten	AMAJF01012	Threatened	Endangered	SSC	-	4012338	WEOTT	Mapped	Animals - Mammals - Mustelidae - Martes caurina humboldtensis
Animals - Mammals	Pekania pennanti	Fisher	AMAJF01020	None	None	SSC	-	4012337	MYERS FLAT	Mapped	Animals - Mammals - Mustelidae - Pekania pennanti

Animals - Mammals	Pekania pennanti	Fisher	AMAJF01020	None	None	SSC	-	4012327	MIRANDA	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Pekania pennanti
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	4012337	MYERS FLAT	Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	4012317	GARBERVILLE	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-	-	4012338	WEOTT	Unprocessed	Animals - Mammals - Vespertilionidae - Lasionycteris noctivagans
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	4012338	WEOTT	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	4012338	WEOTT	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Myotis evotis	long-eared myotis	AMACC01070	None	None	-	-	4012317	GARBERVILLE	Mapped	Animals - Mammals - Vespertilionidae - Myotis evotis
Animals - Mammals	Myotis volans	long-legged myotis	AMACC01110	None	None	-	-	4012338	WEOTT	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis volans
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	4012338	WEOTT	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mollusks	Noyo intersessa	Ten Mile shoulderband	IMGASC5070	None	None	-	-	4012337	MYERS FLAT	Mapped	Animals - Mollusks - Helminthoglyptidae - Noyo intersessa
Animals - Mollusks	Noyo intersessa	Ten Mile shoulderband	IMGASC5070	None	None	-	-	4012327	MIRANDA	Mapped	Animals - Mollusks - Helminthoglyptidae - Noyo intersessa
Animals - Mollusks	Anodonta californiensis	California floater	IMBIV04220	None	None	-	-	4012337	MYERS FLAT	Unprocessed	Animals - Mollusks - Unionidae - Anodonta californiensis
Animals - Mollusks	Anodonta californiensis	California floater	IMBIV04220	None	None	-	-	4012338	WEOTT	Unprocessed	Animals - Mollusks - Unionidae - Anodonta californiensis
Animals - Mollusks	Anodonta californiensis	California floater	IMBIV04220	None	None	-	-	4012317	GARBERVILLE	Unprocessed	Animals - Mollusks - Unionidae - Anodonta californiensis
Animals - Mollusks	Anodonta oregonensis	Oregon floater	IMBIV04110	None	None	-	-	4012338	WEOTT	Unprocessed	Animals - Mollusks - Unionidae - Anodonta oregonensis
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	4012337	MYERS FLAT	Mapped	Animals - Reptiles - Emydidae - Emys marmorata

Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	4012338	WEOTT	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	4012327	MIRANDA	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	4012328	ETTERSBURG	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	4012336	BLOCKSBURG	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	4012316	HARRIS	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	4012317	GARBERVILLE	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Community - Terrestrial	Upland Douglas Fir Forest	Upland Douglas Fir Forest	CTT82420CA	None	None	-	-	4012328	ETTERSBURG	Mapped	Community - Terrestrial - Upland Douglas Fir Forest
Plants - Lichens	Usnea longissima	Methuselah's beard lichen	NLLEC5P420	None	None	-	4.2	4012328	ETTERSBURG	Unprocessed	Plants - Lichens - Parmeliaceae - Usnea longissima
Plants - Lichens	Usnea longissima	Methuselah's beard lichen	NLLEC5P420	None	None	-	4.2	4012336	BLOCKSBURG	Unprocessed	Plants - Lichens - Parmeliaceae - Usnea longissima
Plants - Lichens	Usnea longissima	Methuselah's beard lichen	NLLEC5P420	None	None	-	4.2	4012327	MIRANDA	Unprocessed	Plants - Lichens - Parmeliaceae - Usnea longissima
Plants - Lichens	Usnea longissima	Methuselah's beard lichen	NLLEC5P420	None	None	-	4.2	4012326	FORT SEWARD	Unprocessed	Plants - Lichens - Parmeliaceae - Usnea longissima
Plants - Lichens	Usnea longissima	Methuselah's beard lichen	NLLEC5P420	None	None	-	4.2	4012338	WEOTT	Mapped and Unprocessed	Plants - Lichens - Parmeliaceae - Usnea longissima
Plants - Lichens	Usnea longissima	Methuselah's beard lichen	NLLEC5P420	None	None	-	4.2	4012337	MYERS FLAT	Mapped and Unprocessed	Plants - Lichens - Parmeliaceae - Usnea longissima
Plants - Lichens	Usnea longissima	Methuselah's beard lichen	NLLEC5P420	None	None	-	4.2	4012318	BRICELAND	Unprocessed	Plants - Lichens - Parmeliaceae - Usnea longissima
Plants - Lichens	Usnea longissima	Methuselah's beard lichen	NLLEC5P420	None	None	-	4.2	4012316	HARRIS	Mapped and Unprocessed	Plants - Lichens - Parmeliaceae - Usnea longissima
Plants - Lichens	Usnea longissima	Methuselah's beard lichen	NLLEC5P420	None	None	-	4.2	4012317	GARBERVILLE	Unprocessed	Plants - Lichens - Parmeliaceae - Usnea longissima

Plants - Vascular	Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-	3	4012317	GARBERVILLE	Unprocessed	Plants - Vascular - Asteraceae - Erigeron biolettii
Plants - Vascular	Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-	3	4012338	WEOTT	Unprocessed	Plants - Vascular - Asteraceae - Erigeron biolettii
Plants - Vascular	Erigeron biolettii	streamside daisy	PDAST3M5H0	None	None	-	3	4012327	MIRANDA	Unprocessed	Plants - Vascular - Asteraceae - Erigeron biolettii
Plants - Vascular	Erigeron robustior	robust daisy	PDAST3M134	None	None	-	4.3	4012326	FORT SEWARD	Unprocessed	Plants - Vascular - Asteraceae - Erigeron robustior
Plants - Vascular	Hemizonia congesta ssp. tracyi	Tracy's tarplant	PDAST4R067	None	None	-	4.3	4012326	FORT SEWARD	Unprocessed	Plants - Vascular - Asteraceae - Hemizonia congesta ssp. tracyi
Plants - Vascular	Hemizonia congesta ssp. tracyi	Tracy's tarplant	PDAST4R067	None	None	-	4.3	4012327	MIRANDA	Unprocessed	Plants - Vascular - Asteraceae - Hemizonia congesta ssp. tracyi
Plants - Vascular	Hemizonia congesta ssp. tracyi	Tracy's tarplant	PDAST4R067	None	None	-	4.3	4012336	BLOCKSBURG	Unprocessed	Plants - Vascular - Asteraceae - Hemizonia congesta ssp. tracyi
Plants - Vascular	Hemizonia congesta ssp. tracyi	Tracy's tarplant	PDAST4R067	None	None	-	4.3	4012338	WEOTT	Unprocessed	Plants - Vascular - Asteraceae - Hemizonia congesta ssp. tracyi
Plants - Vascular	Hemizonia congesta ssp. tracyi	Tracy's tarplant	PDAST4R067	None	None	-	4.3	4012317	GARBERVILLE	Unprocessed	Plants - Vascular - Asteraceae - Hemizonia congesta ssp. tracyi
Plants - Vascular	Hemizonia congesta ssp. tracyi	Tracy's tarplant	PDAST4R067	None	None	-	4.3	4012318	BRICELAND	Unprocessed	Plants - Vascular - Asteraceae - Hemizonia congesta ssp. tracyi
Plants - Vascular	Packera bolanderi var. bolanderi	seacoast ragwort	PDAST8H0H1	None	None	-	2B.2	4012337	MYERS FLAT	Mapped	Plants - Vascular - Asteraceae - Packera bolanderi var. bolanderi
Plants - Vascular	Tracyina rostrata	beaked tracyina	PDAST9D010	None	None	-	1B.2	4012326	FORT SEWARD	Mapped	Plants - Vascular - Asteraceae - Tracyina rostrata
Plants - Vascular	Howellia aquatilis	water howellia	PDCAM0A010	Delisted	None	-	2B.2	4012326	FORT SEWARD	Mapped	Plants - Vascular - Campanulaceae - Howellia aquatilis
Plants - Vascular	Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-	2B.3	4012316	HARRIS	Mapped	Plants - Vascular - Caprifoliaceae - Viburnum ellipticum
Plants - Vascular	Silene bolanderi	Bolander's catchfly	PDCAR0U2L0	None	None	-	1B.2	4012326	FORT SEWARD	Mapped	Plants - Vascular - Caryophyllaceae - Silene bolanderi

Plants - Vascular	Carex arcta	northern clustered sedge	PMCYP030X0	None	None	-	2B.2	4012317	GARBERVILLE	Mapped	Plants - Vascular - Cyperaceae - Carex arcta
Plants - Vascular	Astragalus agnicidus	Humboldt County milk-vetch	PDFAB0F080	None	Endangered	-	1B.1	4012327	MIRANDA	Mapped	Plants - Vascular - Fabaceae - Astragalus agnicidus
Plants - Vascular	Astragalus agnicidus	Humboldt County milk-vetch	PDFAB0F080	None	Endangered	-	1B.1	4012337	MYERS FLAT	Mapped	Plants - Vascular - Fabaceae - Astragalus agnicidus
Plants - Vascular	Lathyrus glandulosus	sticky pea	PDFAB251A0	None	None	-	4.3	4012337	MYERS FLAT	Unprocessed	Plants - Vascular - Fabaceae - Lathyrus glandulosus
Plants - Vascular	Lathyrus glandulosus	sticky pea	PDFAB251A0	None	None	-	4.3	4012338	WEOTT	Unprocessed	Plants - Vascular - Fabaceae - Lathyrus glandulosus
Plants - Vascular	Ribes roezlii var. amictum	hoary gooseberry	PDGRO021B1	None	None	-	4.3	4012338	WEOTT	Unprocessed	Plants - Vascular - Grossulariaceae - Ribes roezlii var. amictum
Plants - Vascular	Lycopus uniflorus	northern bugleweed	PDLAM0X080	None	None	-	4.3	4012338	WEOTT	Unprocessed	Plants - Vascular - Lamiaceae - Lycopus uniflorus
Plants - Vascular	Lycopus uniflorus	northern bugleweed	PDLAM0X080	None	None	-	4.3	4012337	MYERS FLAT	Unprocessed	Plants - Vascular - Lamiaceae - Lycopus uniflorus
Plants - Vascular	Lycopus uniflorus	northern bugleweed	PDLAM0X080	None	None	-	4.3	4012327	MIRANDA	Unprocessed	Plants - Vascular - Lamiaceae - Lycopus uniflorus
Plants - Vascular	Lycopus uniflorus	northern bugleweed	PDLAM0X080	None	None	-	4.3	4012317	GARBERVILLE	Unprocessed	Plants - Vascular - Lamiaceae - Lycopus uniflorus
Plants - Vascular	Erythronium oregonum	giant fawn lily	PMLIL0U0C0	None	None	-	2B.2	4012337	MYERS FLAT	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Erythronium oregonum
Plants - Vascular	Erythronium oregonum	giant fawn lily	PMLIL0U0C0	None	None	-	2B.2	4012328	ETTERSBURG	Mapped	Plants - Vascular - Liliaceae - Erythronium oregonum
Plants - Vascular	Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-	2B.2	4012328	ETTERSBURG	Mapped	Plants - Vascular - Liliaceae - Erythronium revolutum
Plants - Vascular	Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-	2B.2	4012337	MYERS FLAT	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Erythronium revolutum
Plants - Vascular	Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-	2B.2	4012327	MIRANDA	Mapped	Plants - Vascular - Liliaceae - Erythronium revolutum
Plants - Vascular	Erythronium revolutum	coast fawn lily	PMLIL0U0F0	None	None	-	2B.2	4012317	GARBERVILLE	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Erythronium revolutum

Plants - Vascular	Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-	4.2	4012327	MIRANDA	Unprocessed	Plants - Vascular - Liliaceae - Lilium rubescens
Plants - Vascular	Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-	4.2	4012337	MYERS FLAT	Unprocessed	Plants - Vascular - Liliaceae - Lilium rubescens
Plants - Vascular	Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-	4.2	4012336	BLOCKSBURG	Unprocessed	Plants - Vascular - Liliaceae - Lilium rubescens
Plants - Vascular	Lilium rubescens	redwood lily	PMLIL1A0N0	None	None	-	4.2	4012338	WEOTT	Unprocessed	Plants - Vascular - Liliaceae - Lilium rubescens
Plants - Vascular	Lilium washingtonianum ssp. purpurascens	purple-flowered Washington lily	PMLIL1A0R2	None	None	-	4.3	4012336	BLOCKSBURG	Unprocessed	Plants - Vascular - Liliaceae - Lilium washingtonianum ssp. purpurascens
Plants - Vascular	Lycopodium clavatum	running-pine	PPLYC01080	None	None	-	4.1	4012338	WEOTT	Mapped and Unprocessed	Plants - Vascular - Lycopodiaceae - Lycopodium clavatum
Plants - Vascular	Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-	4.2	4012337	MYERS FLAT	Mapped and Unprocessed	Plants - Vascular - Malvaceae - Sidalcea malachroides
Plants - Vascular	Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-	4.2	4012338	WEOTT	Mapped and Unprocessed	Plants - Vascular - Malvaceae - Sidalcea malachroides
Plants - Vascular	Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	PDMAL110F9	None	None	-	1B.2	4012337	MYERS FLAT	Mapped and Unprocessed	Plants - Vascular - Malvaceae - Sidalcea malviflora ssp. patula
Plants - Vascular	Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	PDMAL110F9	None	None	-	1B.2	4012317	GARBERVILLE	Mapped	Plants - Vascular - Malvaceae - Sidalcea malviflora ssp. patula
Plants - Vascular	Pityopus californicus	California pinefoot	PDMON05010	None	None	-	4.2	4012337	MYERS FLAT	Unprocessed	Plants - Vascular - Monotropaceae - Pityopus californicus
Plants - Vascular	Pityopus californicus	California pinefoot	PDMON05010	None	None	-	4.2	4012338	WEOTT	Unprocessed	Plants - Vascular - Monotropaceae - Pityopus californicus
Plants - Vascular	Pityopus californicus	California pinefoot	PDMON05010	None	None	-	4.2	4012336	BLOCKSBURG	Unprocessed	Plants - Vascular - Monotropaceae - Pityopus californicus
Plants - Vascular	Montia howellii	Howell's montia	PDPOR05070	None	None	-	2B.2	4012337	MYERS FLAT	Mapped and Unprocessed	Plants - Vascular - Montiaceae - Montia howellii
Plants - Vascular	Montia howellii	Howell's montia	PDPOR05070	None	None	-	2B.2	4012336	BLOCKSBURG	Mapped	Plants - Vascular - Montiaceae - Montia howellii
Plants - Vascular	Montia howellii	Howell's montia	PDPOR05070	None	None	-	2B.2	4012316	HARRIS	Mapped	Plants - Vascular - Montiaceae - Montia howellii

Plants - Vascular	Montia howellii	Howell's montia	PDPOR05070	None	None	-	2B.2	4012327	MIRANDA	Mapped	Plants - Vascular - Montiaceae - Montia howellii
Plants - Vascular	Montia howellii	Howell's montia	PDPOR05070	None	None	-	2B.2	4012326	FORT SEWARD	Mapped	Plants - Vascular - Montiaceae - Montia howellii
Plants - Vascular	Montia howellii	Howell's montia	PDPOR05070	None	None	-	2B.2	4012318	BRICELAND	Mapped	Plants - Vascular - Montiaceae - Montia howellii
Plants - Vascular	Epilobium septentrionale	Humboldt County fuchsia	PDONA06110	None	None	-	4.3	4012317	GARBERVILLE	Unprocessed	Plants - Vascular - Onagraceae - Epilobium septentrionale
Plants - Vascular	Epilobium septentrionale	Humboldt County fuchsia	PDONA06110	None	None	-	4.3	4012337	MYERS FLAT	Unprocessed	Plants - Vascular - Onagraceae - Epilobium septentrionale
Plants - Vascular	Listera cordata	heart-leaved twayblade	PMORC1N060	None	None	-	4.2	4012338	WEOTT	Unprocessed	Plants - Vascular - Orchidaceae - Listera cordata
Plants - Vascular	Listera cordata	heart-leaved twayblade	PMORC1N060	None	None	-	4.2	4012336	BLOCKSBURG	Unprocessed	Plants - Vascular - Orchidaceae - Listera cordata
Plants - Vascular	Listera cordata	heart-leaved twayblade	PMORC1N060	None	None	-	4.2	4012337	MYERS FLAT	Unprocessed	Plants - Vascular - Orchidaceae - Listera cordata
Plants - Vascular	Listera cordata	heart-leaved twayblade	PMORC1N060	None	None	-	4.2	4012327	MIRANDA	Unprocessed	Plants - Vascular - Orchidaceae - Listera cordata
Plants - Vascular	Listera cordata	heart-leaved twayblade	PMORC1N060	None	None	-	4.2	4012317	GARBERVILLE	Unprocessed	Plants - Vascular - Orchidaceae - Listera cordata
Plants - Vascular	Listera cordata	heart-leaved twayblade	PMORC1N060	None	None	-	4.2	4012318	BRICELAND	Unprocessed	Plants - Vascular - Orchidaceae - Listera cordata
Plants - Vascular	Listera cordata	heart-leaved twayblade	PMORC1N060	None	None	-	4.2	4012326	FORT SEWARD	Unprocessed	Plants - Vascular - Orchidaceae - Listera cordata
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012326	FORT SEWARD	Mapped	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012318	BRICELAND	Mapped and Unprocessed	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012317	GARBERVILLE	Mapped and Unprocessed	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012316	HARRIS	Mapped and Unprocessed	Plants - Vascular - Orchidaceae - Piperia candida

Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012327	MIRANDA	Mapped	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012337	MYERS FLAT	Mapped and Unprocessed	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012328	ETTERSBURG	Mapped	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	4012338	WEOTT	Mapped	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Kopsiopsis hookeri	small groundcone	PDORO01010	None	None	-	2B.3	4012327	MIRANDA	Mapped	Plants - Vascular - Orobanchaceae - Kopsiopsis hookeri
Plants - Vascular	Pleuropogon hooverianus	North Coast semaphore grass	PMPOA4Y070	None	Threatened	-	1B.1	4012317	GARBERVILLE	Unprocessed	Plants - Vascular - Poaceae - Pleuropogon hooverianus
Plants - Vascular	Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-	1B.2	4012316	HARRIS	Unprocessed	Plants - Vascular - Polemoniaceae - Gilia capitata ssp. pacifica
Plants - Vascular	Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-	1B.2	4012318	BRICELAND	Mapped	Plants - Vascular - Polemoniaceae - Gilia capitata ssp. pacifica
Plants - Vascular	Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-	1B.2	4012337	MYERS FLAT	Mapped	Plants - Vascular - Polemoniaceae - Gilia capitata ssp. pacifica
Plants - Vascular	Gilia capitata ssp. pacifica	Pacific gilia	PDPLM040B6	None	None	-	1B.2	4012338	WEOTT	Mapped	Plants - Vascular - Polemoniaceae - Gilia capitata ssp. pacifica
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	4012327	MIRANDA	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	4012317	GARBERVILLE	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	4012317	GARBERVILLE	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latisectus
Plants - Vascular	Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	4012316	HARRIS	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latisectus
Plants - Vascular	Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	4012318	BRICELAND	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latisectus
Plants - Vascular	Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	4012327	MIRANDA	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latisectus

Plants - Vascular	Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	4012326	FORT SEWARD	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latisectus
Plants - Vascular	Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	4012336	BLOCKSBURG	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latisectus
Plants - Vascular	Navarretia leucocephala ssp. bakeri	Baker's navarretia	PDPLM0C0E1	None	None	-	1B.1	4012336	BLOCKSBURG	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. bakeri
Plants - Vascular	Coptis laciniata	Oregon goldthread	PDRAN0A020	None	None	-	4.2	4012318	BRICELAND	Mapped and Unprocessed	Plants - Vascular - Ranunculaceae - Coptis laciniata
Plants - Vascular	Ceanothus gloriosus var. exaltatus	glory brush	PDRHA040F4	None	None	-	4.3	4012318	BRICELAND	Unprocessed	Plants - Vascular - Rhamnaceae - Ceanothus gloriosus var. exaltatus
Plants - Vascular	Mitellastra caulescens	leafy-stemmed mitrewort	PDSAX0N020	None	None	-	4.2	4012337	MYERS FLAT	Unprocessed	Plants - Vascular - Saxifragaceae - Mitellastra caulescens
Plants - Vascular	Tiarella trifoliata var. trifoliata	trifoliate laceflower	PDSAX10031	None	None	-	3.2	4012318	BRICELAND	Unprocessed	Plants - Vascular - Saxifragaceae - Tiarella trifoliata var. trifoliata

CNPS Rare Plant Inventory

California Native Plant Society

Search Results

36 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**4012326:4012336:4012316:4012337:4012338:4012317:4012328:4012327:4012318**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
Astragalus agnicidus	Humboldt County milk-vetch	Fabaceae	perennial herb	Apr-Sep	None	CE	G2	S2	1B.1
Carex arcta	northern clustered sedge	Cyperaceae	perennial herb	Jun-Sep	None	None	G5	S1	2B.2
Ceanothus gloriosus var. *exaltatus*	glory brush	Rhamnaceae	perennial evergreen shrub	Mar-Jun(Aug)	None	None	G4T4	S4	4.3
Coptis laciniata	Oregon goldthread	Ranunculaceae	perennial rhizomatous herb	(Feb)Mar-May(Sep-Nov)	None	None	G4?	S3?	4.2
Epilobium septentrionale	Humboldt County fuchsia	Onagraceae	perennial herb	Jul-Sep	None	None	G4	S4	4.3
Erigeron biolettii	streamside daisy	Asteraceae	perennial herb	Jun-Oct	None	None	G3?	S3?	3
Erigeron robustior	robust daisy	Asteraceae	perennial herb	Jun-Jul	None	None	G3	S3	4.3
Erythronium oregonum	giant fawn lily	Liliaceae	perennial herb	Mar-Jun(Jul)	None	None	G5	S2	2B.2
Erythronium revolutum	coast fawn lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4G5	S3	2B.2
Gilia capitata ssp. *pacifica*	Pacific gilia	Polemoniaceae	annual herb	Apr-Aug	None	None	G5T3	S2	1B.2
Hemizonia congesta ssp. *tracyi*	Tracy's tarplant	Asteraceae	annual herb	(Mar)May-Oct	None	None	G5T4	S4	4.3
Howellia aquatilis	water howellia	Campanulaceae	annual herb (aquatic)	Jun	FD	None	G3	S2	2B.2
Kopsiopsis hookeri	small groundcone	Orobanchaceae	perennial rhizomatous herb (parasitic)	Apr-Aug	None	None	G4?	S1S2	2B.3
Lathyrus glandulosus	sticky pea	Fabaceae	perennial rhizomatous herb	Apr-Jun	None	None	G3	S3	4.3
Leptosiphon aureus	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G4?	S4?	4.2
Leptosiphon latisectus	broad-lobed leptosiphon	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3
Lilium rubescens	redwood lily	Liliaceae	perennial bulbiferous herb	Apr-Aug(Sep)	None	None	G3	S3	4.2
Lilium washingtonianum ssp. *purpurascens*	purple-flowered Washington lily	Liliaceae	perennial bulbiferous herb	Jun-Aug	None	None	G4T4	S3S4	4.3

Listera cordata	heart-leaved twayblade	Orchidaceae	perennial herb	Feb-Jul	None	None	G5	S4	4.2
Lycopodium clavatum	running-pine	Lycopodiaceae	perennial rhizomatous herb	Jun-Aug(Sep)	None	None	G5	S3	4.1
Lycopus uniflorus	northern bugleweed	Lamiaceae	perennial herb	Jul-Sep	None	None	G5	S4	4.3
Mitellastra caulescens	leafy-stemmed mitrewort	Saxifragaceae	perennial rhizomatous herb	(Mar)Apr-Oct	None	None	G5	S4	4.2
Montia howellii	Howell's montia	Montiaceae	annual herb	(Feb)Mar-May	None	None	G3G4	S2	2B.2
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G4T2	S2	1B.1
Packera bolanderi var. *bolanderi*	seacoast ragwort	Asteraceae	perennial rhizomatous herb	(Jan-Apr)May-Jul(Aug)	None	None	G4T4	S2S3	2B.2
Piperia candida	white-flowered rein orchid	Orchidaceae	perennial herb	(Mar)May-Sep	None	None	G3?	S3	1B.2
Pityopus californicus	California pinefoot	Ericaceae	perennial herb (achlorophyllous)	(Mar-Apr)May-Aug	None	None	G4G5	S4	4.2
Pleuropogon hooverianus	North Coast semaphore grass	Poaceae	perennial rhizomatous herb	Apr-Jun	None	CT	G2	S2	1B.1
Ribes roezlii var. *amictum*	hoary gooseberry	Grossulariaceae	perennial deciduous shrub	Mar-Apr	None	None	G5T4	S4	4.3
Sidalcea malachroides	maple-leaved checkerbloom	Malvaceae	perennial herb	(Mar)Apr-Aug	None	None	G3	S3	4.2
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	Malvaceae	perennial rhizomatous herb	(Mar)May-Aug	None	None	G5T2	S2	1B.2
Silene bolanderi	Bolander's catchfly	Caryophyllaceae	perennial herb	May-Jun	None	None	G2	S2	1B.2
Tiarella trifoliata var. *trifoliata*	trifoliate laceflower	Saxifragaceae	perennial rhizomatous herb	(May)Jun-Aug	None	None	G5T5	S2S3	3.2
Tracyina rostrata	beaked tracyina	Asteraceae	annual herb	May-Jun	None	None	G2	S2	1B.2
Usnea longissima	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)		None	None	G4	S4	4.2
Viburnum ellipticum	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3?	2B.3

Showing 1 to 36 of 36 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 7 September 2022].

Appendix E

Vegetation Rapid Assessment Forms

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance Pseudotsuga menziesii - Notholithocarpus densiflorus Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION — circle: Relevé or (RA)

Database #:	Date:	Name of recorder: K. Lundgren
RCSD001	7/11/22	Other surveyors:
	UID:	Location Name: RCSD WWTF

GPS name: Eos Arrow — For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side

UTME _____ UTMN _____ Zone: 10 ~~NAD83~~ NAD88 GPS error: ft / (m) PDOP 1

Decimal degrees: LAT 40.074875 LONG -123.492381

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record: Base point ID _____ Projected UTMs: UTME _____ UTMN _____

Camera Name: Cardinal photos at ID point:

Other photos:

Stand Size (acres): (<1) 1-5, >5 | Plot Area (m²): 100 / _____ | Plot Dimensions ____ x ____ m | RA Radius 9 m

Exposure, Actual °: _____ NE NW SE SW Flat Variable | Steepness, Actual °: _____ 0° 1-5° >5-25° >25

Topography: Macro: top upper mid (lower) bottom | Micro: convex flat concave (undulating)

Geology code: _____ Soil Texture code: _____ | (Upland) or Wetland/Riparian (circle one)

% Surface cover:	(Incl. outcrops)	(>60cm diam)	(25-60cm)	(7.5-25cm)	(2mm-7.5cm)	(Incl sand, mud)
H2O:	(BA Stems: 40 | Litter) 40	Bedrock:	Boulder:	Stone:	Cobble:	Gravel:	(Fines) 20	=100%

% Current year bioturbation _____ Past bioturbation present? Yes / (No) | % Hoof punch _____

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Regenerating Doug-fir forest (small diameter), tanoak & bay laurel understory. Tanoak is "shrubby" in shrub layer. Low lying, creeping poison oak in shrub/herb layer

Disturbance code / Intensity (L,M,H): ____/____ ____/____ ____/____ ____/____ ____/____ "Other" _____/____

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), (T2) (1-6" dbh), (T3) (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), (S2) young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: (H1) <12" plant ht.), H2 (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Douglas fir - tanoak forest

Field-assessed Association name (optional): Pseudotsuga menziesii - Notholithocarpus densiflorus / Toxicodendron diversilobum - Lonicera hispidula

Adjacent Alliances/direction: _____ / _____, _____ / _____

Confidence in Alliance identification: L M (H) Explain: _____

Phenology (E,(P),L): Herb P/L Shrub P Tree ____ Other identification or mapping information:

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

SPECIES SHEET

Database #: RCSD001

IV. VEGETATION DESCRIPTION

% NonVasc cover:____ Total % Vasc Veg cover:_____

% Cover - Conifer tree / Hardwood tree: 60 / 40 Regenerating Tree: _____ Shrub: 35 Herbaceous: 15

Height Class - Conifer tree / Hardwood tree: ____/____ Regenerating Tree: _____ Shrub: _____ Herbaceous: _____

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
T	Pseudotsuga menziesii	45		
T	Sequoia sempervirens	<2		
T	Umbellularia californica	10		
T	Notholithocarpus densiflorus	30		
S	Corylus cornuta	15		
S/H	Toxicodendron diversilobum	30		
H	Lonicera hispidula	10		
H	Athyrium felix femina (Dryopteris)		<2	
H	Pentagramma triangularis		<2	
T	Quercus chrysolepis	15		

Unusual species: ____________________

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type: Alliance Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION — circle: Relevé or (RA)

Database #:	Date:	Name of recorder: Kolby Lundgren
RCSD002	7/11/22	Other surveyors:
	UID:	Location Name: RCSD WWTF

GPS name: Eos Arrow — For Relevé only: Bearing°, left axis at ID point____ of Long / Short side

UTME ___ UTMN ___ Zone: 11 NAD83 GPS error: ft./ m./ PDOP ____

Decimal degrees: LAT 40.075036 LONG 123.492087

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record: Base point ID ____ Projected UTMs: UTME ___ UTMN ___

Camera Name: Cardinal photos at ID point:

Other photos:

Stand Size (acres): <1, (1-5) >5 | Plot Area (m²): 100 / ____ | Plot Dimensions ____ x ____ m | RA Radius 9 m

Exposure, Actual °: ____ (NE) NW (SE) SW Flat Variable | Steepness, Actual °: ____ 0° 1-5° (5-25°) > 25

Topography: Macro: top upper mid (lower) bottom | Micro: convex flat concave undulating

Geology code: ____ Soil Texture code: ____ | Upland or Wetland/(Riparian) (circle one)

% Surface cover:	(incl. outcrops)	(>60cm diam)	(25-60cm)	(7.5-25cm)	(2mm-7.5cm)	(Incl sand, mud)	
H_2O:	BA Stems: 5	Litter: 90	Bedrock:	Boulder:	Stone:	Cobble:	Gravel:	Fines: 5	=100%

% Current year bioturbation ___/___ Past bioturbation present? Yes / (No) | % Hoof punch ___/___

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Dense redwood/doug-fir stand. Small diameter trees, low herb & shrub cover. Shaded understory.

Disturbance code / Intensity (L,M,H): ___/___ ___/___ ___/___ ___/___ ___/___ "Other" ____/___

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), (T2) (1-6" dbh), (T3) (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), (S2) young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: (H1) (<12" plant ht.), H2 (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Sequoia sempervirens forest & woodland

Field-assessed Association name (optional): " " - Pseudotsuga menziesii - Notholithocarpus densiflorus

Adjacent Alliances/direction: ____/____, ____/____

Confidence in Alliance identification: L M H Explain: ____

Phenology (E,P,L): Herb P Shrub P Tree P Other identification or mapping information: ____

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

SPECIES SHEET

Database #: RCSD 002

IV. VEGETATION DESCRIPTION

% NonVasc cover: <1 **Total % Vasc Veg cover:** 70

% Cover - **Conifer tree / Hardwood tree:** 80 / 10 **Regenerating Tree:** 5 **Shrub:** 20 **Herbaceous:** 2

Height Class - **Conifer tree / Hardwood tree:** 8 / 6 **Regenerating Tree:** 4 **Shrub:** 3 **Herbaceous:** 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
T	Sequoia sempervirens	40		
T	Pseudotsuga menziesii	35		
T	Notholithocarpus densiflorus	25		
T	Acer macrophyllum	10		
T	Umbellularia californica	5		
S	Vaccinium ovatum	20		
S	Toxicodendron diversilobum	5		
H	Polystichum munitum	10		
H	Clintonia andrewsiana	<2		

Unusual species:

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type: Alliance / Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION — circle: Relevé or (RA)

Database #: RCSD003 | Date: 7/11/22 | Name of recorder: Kolby Lundgren | Other surveyors: /

UID: | Location Name: RCSD

GPS name: 600 Arrow — For Relevé only: Bearing°, left axis at ID point____ of Long / Short side

UTME ____ UTMN ____ Zone: 11 NAD83 GPS error: ft./ m./ PDOP ____

Decimal degrees: LAT 40.07'53.01 LONG 123.49'19.41

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record: Base point ID ____ Projected UTMs: UTME ____ UTMN ____

Camera Name: Cardinal photos at ID point:

Other photos:

Stand Size (acres): <1, (1-5) >5 | Plot Area (m²): 100 / ____ | Plot Dimensions ____ x ____ m | RA Radius 10 m

Exposure, Actual °: ____ NE NW SE SW Flat Variable | Steepness, Actual °: ____ 0° (1-5°) > 5-25° > 25

Topography: Macro: top upper (mid) lower bottom | Micro: convex (flat) concave undulating

Geology code: / Soil Texture code: / | (Upland) or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: BA Stems: 1 Litter: 95 Bedrock: Boulder: Stone: Cobble: Gravel: Fines: 4 =100%

% Current year bioturbation / Past bioturbation present? Yes / (No) | % Hoof punch /

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

regenerating tanoak stand w/ sparse, isolated true oaks & scattered madrone.

Dense carpeting pasonak in patches.

Dense himalayan blackberry along roadside

Disturbance code / Intensity (L,M,H): / / ____ ____ / ____ ____ / ____ ____ / ____ ____ / ____ "Other" / ____ / ____

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), (T2) (1-6" dbh), (T3) 6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), (S2) young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: (H1) (<12" plant ht.), H2 (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Tanoak forest

Field-assessed Association name (optional): ____

Adjacent Alliances/direction: ____ / ____, ____ / ____

Confidence in Alliance identification: L M H Explain: ____

Phenology (E,P,L): Herb ____ Shrub ____ Tree ____ Other identification or mapping information: ____

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

SPECIES SHEET

Database #: RCSD003

IV. VEGETATION DESCRIPTION

% NonVasc cover: 0 **Total % Vasc Veg cover:** 50

% Cover - **Conifer tree / Hardwood tree:** 10 / 60 **Regenerating Tree:** 15 **Shrub:** 15 **Herbaceous:** 3

Height Class - **Conifer tree / Hardwood tree:** 0 / 6 **Regenerating Tree:** 5 **Shrub:** 2 **Herbaceous:** 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
T	Notholithocarpus densiflorus	60		
T	Quercus chrysolepis	5		
T	Arbutus menziesii	15		
T	Pseudotsuga menziesii	5		
H	Pteridium aquilinum	8		
S	Rubus armeniacus	15		
S	Toxicodendron diversilobum	35		

Unusual species:

Appendix F

Wildlife Species Observed On-site

Table F-1 Terrestrial Wildlife Observed On-site

Common Name	Latin Name	Observation Type	Special Status
Black-tailed deer	*Odocoileus hemionus columbianus*	Observed	None
Western Tiger Swallowtail	*Papilio rutulus*	Observed	None
Western Gray Squirrel	*Sciurus griseus*	Observed	None

Table F-2 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 F-3 Avian Species Detected On-site

Alpha Code	Common Name	Latin Name	Highest Breeding Status	Breeding Code	Special Status
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	Encountered flying over the study area	O	FGC, MTBA
WIWA	Wilson's Warbler	*Cardellina pusilla*	Encountered in the study area	E	FGC, MTBA
TUVU	Turkey Vulture	*Cathartes aura*	Encountered flying over the study area	O	FGC, MTBA
HETH	Hermit Thrush	*Catharus guttatus*	Territorial song or drumming heard	S	FGC, MTBA
WREN	Wrentit	*Chamaea fasciata*	Territorial song or drumming heard	S	FGC, MTBA
AMCR	American Crow	*Corvus brachyrhynchos*	Encountered in study area	E	FGC, MTBA
PSFL	Pacific-slope Flycatcher	*Empidonax difficilis*	Territorial song or drumming heard	S	FGC, MTBA

Alpha Code	Common Name	Latin Name	Highest Breeding Status	Breeding Code	Special Status
DEJU	Dark-eyed Junco	*Junco hyemalis*	Encountered in the study area	E	FGC, MTBA
ACWO	Acorn Woodpecker	*Melanerpes formicivorus*	Territorial song or drumming heard	S	FGC, MTBA
SOSP	Song Sparrow	*Melospiza melodia*	Territorial song or drumming heard	S	FGC, MTBA
CALT	California Towee	*Melozone crissalis*	Territorial song or drumming heard	S	FGC, MTBA
DOWO	Downy Woodpecker	*Picoides pubescens*	Territorial song or drumming heard	S	FGC, MTBA
SPTO	Spotted Towee	*Pipilo maculatus*	Territorial song or drumming heard	S	FGC, MTBA
WETA	Western Tanager	*Piranga ludoviciana*	Encountered in the study area	E	FGC, MTBA
CBCH	Chestnut-backed Chickadee	*Poecile rufescens*	Territorial behavior	T	FGC, MTBA
NRWS	Northern Rough-winged Swallow	*Stelgidopteryx serripenni*	Encountered in the study area	E	FGC, MTBA
EUCD	Eurasian Collared-Dove	*Streptopelia decaocto*	Territorial song or drumming heard	S	None; invasive

Definitions:

FGC = protected by California Fish and Game Code

MBTA = protected by the federal Migratory Bird Treaty Act

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