Old Arcata Road Rehabilitation & Pedestrian/Bikeway Improvements

Public Circulation Draft Initial Study/ Proposed Mitigated Negative Declaration SCH # 2021010176

GHD | 718 3rd Street, Eureka, CA 95501 USA

January 2021

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Public Circulation Draft

Initial Study/Proposed Mitigated Negative Declaration

City of Arcata

Old Arcata Road Rehabilitation & Pedestrian/Bikeway Improvements

Prepared for:

City of Arcata
736 F Street
Arcata, CA 95521

Prepared by:

GHD
718 3rd Street
Eureka, California 95501

January 2021

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1. Project Information

Project Title	Old Arcata Road Rehabilitation and Pedestrian/Bikeway Improvements
Lead Agency Name & Address	City of Arcata, 736 F Street, Arcata, CA 95521
Contact Person & Phone Number	Netra Khatri
Project Location	Bayside, California
Project Sponsor's Name & Address	City of Arcata, 736 F Street, Arcata, CA 95521
General Plan Land Use Designation	N/A, Public roadway.
Zoning	N/A, Public roadway.

1.1 CEQA Requirements

This Project is subject to the requirements of the California Environmental Quality Act (CEQA). The lead agency is the City of Arcata (City). 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

In 2016, the City's Transportation Safety Committee (TSC) identified the need to address the lack of adequate bicycle and pedestrian facilities along Old Arcata Road within city limits (SHN and Omni Means 2017). The need for improvements was later substantiated during a City-led community design charrette process which included the identification of deficiencies and potential

improvements. The results of the community design charrette led to the development of a Project Study Report (PSR) (City of Arcata 2017), and the City Council selection of a preferred alternative in November 2017. In 2018 the City secured partial funding for Project development and construction through State Transportation Improvement Program (STIP).

1.3 Purpose and Need

The purpose of the Project is to improve connectivity and safety for non-motorized and motorized travelers in Bayside, California and increase the use of active modes of transportation. The Project was initially developed during a community-based process for preliminary design concepts (SHN 2017). The Project would have additional benefits including heightened driver awareness of the community and filling the gap for non-motorized travel between the Jacoby Creek School and Jacoby Creek Road. The Project would also reconstruct or rehabilitate the existing roadway pavement in order to extent its useful life.

Many of the existing walkways, driveways and curb ramps within the Project area are non-compliant with current accessibility codes and standards and create a barrier to pedestrian mobility. In addition, there is a lack of pedestrian facilities and connectivity between Hyland Street and Jacoby Creek Road, and a lack of pedestrian facilities on Hyland Street.

The existing roadway pavement (travel lanes and bike lanes) is extremely deteriorated and considered to be in “poor” condition with an average pavement condition index (PCI) of 61.6 (NCE 2017). Old Arcata Road is the primary backbone for the Bayside (southern Arcata) transportation network and pavement failure would result in significant social and economic impacts to the community (including residents and businesses). The Old Arcata Road acts as an alternative route and oversized load route for Highway 101, provides access to important facilities such as the Sunnybrae Middle School, Jacoby Creek Elementary School, and the Bayside Post Office, provides access to unincorporated areas, and may serve as a future route for a Humboldt Transit Authority bus route.

1.4 Surrounding Land Uses and Existing Setting

The Old Arcata Road Rehabilitation and Pedestrian/Bikeway Improvements Project (Project) is primarily located within the limits of the City of Arcata (Figure 1-1). The proposed roundabout at the Jacoby Creek Road intersection, along with its eastern and southern approaches (on Jacoby Creek Road, and Old Arcata Road, respectively) are located within the jurisdiction of Humboldt County. The Coastal Zone boundary is located on the eastern edge of Old Arcata Road (Figure 1-2). The primary permitting jurisdiction resides with the Local Coastal Programs of both the City of Arcata and Humboldt County for their respective portions of the Project. Work would generally occur within the existing City of Arcata or Humboldt County right of ways. Necessary permissions will be received for any work outside existing right-of-ways.

The Project Area along Old Arcata Road and Hyland Street is primarily bound by private residences, including medium-high density residential, rural residential, and low density residential housing. The Jacoby Creek Elementary School and Mistwood Education Center are located along the Project corridor, as are small businesses (zoned Commercial Mixed), a U.S. Post Office, and the Bayside Community Hall. The area between Highway 101 and Old Arcata Road includes Agricultural-Exclusive properties within the City of Arcata, in the Gannon Slough and Jacoby Creek bottomlands. Several small Public-Facility parcels are located adjacent to the Project corridor, including community gardens.

1.5 Project Description

The Project would improve motorized and non-motorized transportation and user safety in Bayside, California. The project would link critical activity centers within the community, including schools, neighborhood facilities, and residential areas. Refer to Figure 1-3 for an overview of key project components.

The project would repave Old Arcata Road, including bike lanes on both sides of the roadway alignment, and improve and extend an existing shared use walkway along the west side of Old Arcata Road from approximately 600 feet south of the Buttermilk Road Roundabout and extending south to approximately 300 feet beyond the Jacoby Creek Road intersection. The total project length is approximately one mile.

The project includes intersection and pedestrian safety improvements along Old Arcata Road, including sidewalk and walkway improvements, curb ramps, curbs and gutters, speed humps, and enhanced crosswalks. New pavement would extend into residential and commercial driveways along Old Arcata Road to ensure smooth transition between existing and new pavement elevations. Construction of a new sidewalk along approximately 375 feet of Hyland Street is also included in the project.

The project includes improvements to the underground storm drain infrastructure that extends along the length of planned improvements in discrete locations. Improvements include new and upgraded storm drain catch basins, storm drain piping, and storm drain junction boxes.

The project may include the replacement of sanitary sewer laterals and the installation of cleanouts. The project may also include the replacement of water service connections and resetting/installation of water meters within City/Public right-of-way.

A new roundabout would be constructed near the southern terminus of the project at the intersection of Jacoby Creek Road. Crosswalks, signage, lighting, and paved walkways would be integrated into the roundabout. A new retaining wall would extend along the west side of Old Arcata Road adjacent to the roundabout. The total length of the wall would be 200 feet. Modifications and repaving of the roadway that serves the Bayside Post Office may also be required.

The project would terminate approximately 300 feet south of the proposed Jacoby Creek Roundabout along Old Arcata Road. The Jacoby Creek Road pavement improvements would terminate approximately 400 feet east of the proposed roundabout. While drainage improvements on Jacoby Creek Road would terminate approximately 600 feet east of the roundabout.

The project also includes approximately 1,600 square feet of onsite wetland creation within the roadside right-of-way (areas adjacent to the proposed project).

The Project is being designed in accordance with the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets, 7th Edition* (2018). In addition, the Project would be designed in accordance to other specific applicable standards, including the *California Manual on Uniform Traffic Control Devices* (CA MUTCD 2020); the 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design; the 2019 California Building Code and portions of the Caltrans *Highway Design Manual, 7th Edition* (2020).

The project is being designed to accommodate the expected volume and diversity of users, which includes a range of ages, experience levels, speeds, trip purposes, and mobility modes. As described in more detail below, the project includes road resurfacing, a paved walkway, sidewalks

and curb ramps, crosswalks, speed humps, lighting, signage, a retaining wall, and stormwater drainage and infrastructure improvements. Particular constraints within the project alignment may warrant adjustments to the standards to address site specific issues.

As part of the Project design process, the City would conduct a design-level geotechnical and pavement investigation for the Project. The City would design the Project in accordance to the recommendations made in the Project's geotechnical and pavement investigation report.

Repaving Along Old Arcata Road and Adjacent Bike Lanes

Old Arcata Road would be repaved between the approximately 600 feet south of the Buttermilk Road to the proposed new roundabout at the Jacoby Creek Road intersection. Repaving would extend approximately 300 feet beyond the new roundabout along both Jacoby Creek Road and Old Arcata Road. The existing roadway width, alignment, and footprint would generally remain the same between the Buttermilk Road Roundabout and Hyland Street, including 10 feet travel lanes and adjacent 5 feet bikes lanes. A left hand turn lane for northbound traffic is proposed at the Jacoby Creek School parking lot at the Hyland Street intersection. South of Hyland Street, the existing roadway alignment would be shifted east up to 5 feet to accommodate a new 6 feet wide walkway, described below.

The existing asphalt roadway would be rehabilitated by overlaying the existing surface and/or grinding-out and replacing the existing surface. Excavation would not extend into the native subgrade, except in isolated areas where deeper excavations may be required to remediate poor soil/subgrade conditions.

Portions of existing driveways, including the Bayside Post Office driveway, would also be repaved.

Pedestrian Walkway

The existing walkway between the Buttermilk Road Roundabout and Hyland Street would be replaced to a width of approximately 6 feet.

South of Hyland Street, the existing roadway alignment would be shifted east up to 5 feet to accommodate a new 6 feet wide walkway. The 6 feet wide walkway would be separated from the roadway by a 5 feet wide vegetated strip that would also be designed to convey stormwater where practical. Areas of new asphalt roadway would be constructed over 12 to 16 inches of base material and a similar depth of excavation.

Crosswalks and Speed Humps

Existing cross walks and speed humps would be upgraded coincident with repaving. New speed humps would be located north of the Hyland Street intersection and south of Jacoby Creek School to improve safety and provide vehicular speed control. A raised crosswalk in front of Jacoby Creek School at the Hyland Street intersection would remain. Crosswalks would also be integrated into the new Jacoby Creek Road Roundabout, discussed below. All crosswalks across Old Arcata Road and Jacoby Creek Road are proposed to include user activated warning lights (e.g. LED enhanced signs or rapid rectangular flashing beacons).

Sidewalk, Curb Ramps, Gutters, Retaining Structures, and Fencing

In front of Jacoby Creek School, a new 6 feet wide sidewalk is proposed on the west side of the road in addition to a left hand turn lane for northbound Old Arcata Road. The on-street diagonal parking would be eliminated to accommodate the sidewalk and turn lane. Some minor modifications to the school parking lot are also proposed, including replacing a portion of the raised landscape island with paved parking stalls. Construction of a new sidewalk along approximately 375 feet of Hyland Street is also included in the Project. Where necessary, curb ramps and gutters would be integrated into the sidewalk design. A new retaining wall would be constructed near the Jacoby Creek Road roundabout.

New concrete for the retaining wall, sidewalks, and walkways will be colorized to improve visual connectivity to maintain consistency with the existing rural setting of the community. Stamped and colored concrete will be applied to roadway dividing medians. The retaining wall near the Jacoby Creek intersection would be approximately one foot above the road grade. Depending on the final design grade, a fence (approximately four feet tall) would be attached to the top of the retaining wall for edge protection. The fence would be transparent, most likely coated black chain link. A fence of similar style would also be installed on the opposite side of Old Arcata Road in front of the City pump station. The retaining wall and fencing would not impede views within or adjacent to the project corridor or otherwise diminish the visual character of the vicinity.

Parking

The five paved diagonal parking spaces on Old Arcata Road in front of Jacoby Creek School would be eliminated in order to accommodate the proposed improvements.

Jacoby Creek Road Roundabout

A new roundabout is proposed for the intersection at Jacoby Creek Road and Old Arcata Road to improve traffic flow and user safety. The roundabout would be configured to be within existing City and County right-of-way to the extent practical, although some encroachments onto private property may be necessary and may require acquisitions or easements. Excavation to accommodate the roundabout and roadway approaches is expected to be approximately 2 to 4 feet, although some isolated deeper excavations may be required to remediate poor soil/subgrade conditions.

Concrete improvements associated with the roundabout, including the roundabout apron, sidewalk, and walkways would include integral color to darken the concrete and provide a weathered look, designed to blend into the existing community aesthetic and character and avoiding a stark visual alteration. Architectural lighting features matching the existing neighborhood character will be installed and will be selected as part of the final design phase. Dependent on available grant funding and community interest, sculptural pieces and/or signage may also be installed in the roundabout center as part of the final design phase, in coordination with the City and other stakeholders. Roundabout landscaping is discussed in the section below.

Vegetation

Trees removed during construction will be replaced in other nearby locations. All tree plantings associated with the project will include appropriate tree species designed to blend into surrounding mature vegetation.

The center of the roundabout will be mounded to a height of approximately three to five feet above grade and landscaped with appropriate vegetation species. Plantings would be consistent with other City roundabouts and public right-of-ways. The City anticipates using grasses and/or other drought tolerant species. All new plantings would be designed to maximize connectivity with existing landscaping and mature trees.

Lighting

The project would include streetlight installation in conjunction with the new Jacoby Creek Road roundabout. Lighting would be designed to protect wildlife and nighttime views, including views of the night sky. The project will be designed to be consistent with the City's design guidelines, Section 9.30.070 (Outdoor Lighting) of the Arcata Land Use Code, and the recommendations of the International Dark-Sky Association, which includes standards for fixtures, shielding, wattage, placement, height, and illumination levels. To comply with these requirements, lighting for the project will be the minimum lumens necessary, directed downward, shielded, and pedestrian level when feasible. This will ensure lighting is contained within the site and does not cause significant lighting and glare impacts for surrounding land uses and sensitive habitat areas.

Striping, Signage and Vehicle Control

The repaved Old Arcata Road and Jacoby Creek Road segments would include required striping and signage in order to comply with California Manual on Uniform Traffic Control Devices (MUTCD) requirements.

Storm Drain, Sanitary Sewer, and Water Infrastructure Improvements

Storm drain improvements include new and upgraded storm drain piping, catch basins, and junction boxes. Excavation and trenching depths for storm drain systems would be approximately 4 feet (6 feet max). Work would also include the installation of shallow swales to convey stormwater runoff. Water service connections may be updated, along with resetting and/or installation of water meters.

Existing sanitary sewer laterals may be replaced with new cleanouts placed at the edge of the right-of-way. Depth of excavation/trenching for sewer lateral replaced would be approximately 3 feet (6 feet max).

Wetland Establishment

If impacts to wetlands are unavoidable, the project would include onsite wetland creation within the City's right-of-way between Old Arcata Road and Bayside Road. Approximately 1,600 sq-feet of wetland creation is anticipated. Groundwater data would be obtained by the City and used to inform wetland design grading depths to ensure wetland hydrology criteria are met. The criteria for meeting wetland hydrology as defined by the U.S. Army Corps of Engineers (USACE) is flooding or ponding, or a water table within 12 inches of the soil surface for 14 or more consecutive days (USACE 2010). Wetlands would be established by excavating to a target elevation.

1.5.1 Project Construction

Construction of the Project would involve construction staging, establishing site access, hauling, dewatering, and traffic control. A Temporary Traffic Control Plan would be developed by the

contractor and approved by the City prior to Project implementation.

Following construction, the contractor would demobilize and remove equipment, supplies, and construction wastes. The disturbed areas along the Project alignment would be restored to pre-construction conditions or stabilized with a combination of grass seed (broadcast or hydroseed), straw mulch, rolled erosion control fabric, rock, and other plantings/vegetation. Construction would primarily include trimming and/or removal of trees and vegetation, excavation and grading, concrete and asphalt paving, replacement of sanitary sewer laterals, and trenching and excavation to install new sanitary sewer laterals and storm drainage systems (inlets, pipes, and/or culverts). Construction would also include installation of new lighting, new and upgraded crosswalks and speed bumps, a retaining wall, and signage along the Project alignment. All construction activities would be accompanied by both temporary erosion and sediment control best management practices (BMPs).

It is not anticipated that any temporary utility extensions, such as electric power or water, would be required for construction.

Construction Duration and Hours

Construction is anticipated to occur over a six to eight month construction window. If feasible, vegetation clearing would occur during the non-bird nesting season, between August 16th and March 14th. Work near wetlands would only occur during the dry season between May and October. Compliance with the requirements contained in the Arcata General Plan Noise Element (Policies N-5d and N-5e) and the Arcata Land Use Code (Section 9.30.050[D][2]), will minimize potential noise impacts from short-term construction activities. These requirements place limitations on the days and hours of construction activities to allow construction schedules to take advantage of the weather and normal daylight hours, and to ensure that nearby residents as well as nonresidential activities are not disturbed by the early morning or late night activities. Hours of construction would be limited to 8:00 a.m. to 7:00 p.m. on Monday through Friday and from 9:00 a.m. to 7:00 p.m. on Saturdays. Heavy-equipment related construction activities are not allowed on Sundays. Construction on Sunday or legal and county holidays is not currently anticipated except for emergencies or with prior approval from the City of Arcata. All stationary and construction equipment are required to be maintained in good working order and fitted with factory approved muffler systems.

Construction Equipment

A variety of construction equipment would be used to build the Project. This would include, but not necessarily be limited to, excavators, backhoes, front end loaders, scrapers, graders, concrete saws, jackhammers, chainsaws, rollers, asphalt pavers, compactors, air compressors, generators, and pneumatic tools. A variety of trucks including concrete mixers, haul trucks, and water trucks would also be required. Site preparation, including demolition, clearing and grading of the Project site 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 certain existing utilities that would be removed and replaced.

Construction Staging Areas

Construction staging areas would be identified during the design phase of work and are expected to occur within the Project footprint, or within paved, graveled or designated, previously disturbed

areas. For impact analysis purposes, two staging areas were preliminary identified—one at the southern end of the Project corridor and the other at the northern end of the Project corridor. Spoils or construction materials would be stored on site within previously designated staging areas only. Excess spoils would ultimately be hauled off-site for disposal and reuse by the contractor.

Construction Dewatering

If needed, temporary groundwater dewatering would be conducted to provide a dry work area. Dewatering would involve pumping water out of a trench or excavation. Groundwater would typically be pumped to Baker tanks (or other similar type of settling tank) or into a dewatering bag. Following the settling process provided by a tank or filter, the water would be used for dust control and compaction. Discharge water from Baker tanks would not be discharged into wetlands or any water bodies.

1.6 Operation and Maintenance

Following construction, general operation and maintenance activities associated with the proposed Project would be limited to typical roadway maintenance, including annual inspections, trash/debris removal, vegetation management, repaving, and painting.

1.7 Environmental Protection Actions Incorporated into the Project

The following actions are included as part of the Project to reduce or avoid potential adverse effects that could result from construction or operation of the Project. Additional mitigation measures are presented in the following analysis sections in Chapter 3, Environmental Analysis. Environmental protection actions and mitigation measures, together, would be included in a Mitigation Monitoring Program at the time that the Project is considered for approval.

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

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

1.8 Required Agency Approvals

The following permits and approvals are likely to be required prior to construction:

- CEQA compliance
- NEPA compliance

- North Coast Regional Water Board Clean Water Act (NCRWQCB) Section 401 certification
- U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit
- City of Arcata Coastal Development Permit
- Humboldt County Coastal Development Permit
- Humboldt County Grading Permit
- Humboldt County Encroachment Permit

1.9 Tribal Consultation

The City has received requests for notification of proposed projects from California Native American tribes pursuant to Public Resources Code Section 21080.3.1. Under Assembly Bill (AB) 52, notification letters were sent to designated Tribal Historic Preservation Officers (THPOs) for the Blue Lake Rancheria, Wiyot Tribe, and Bear River Band of the Rohnerville Rancheria on August 30, 2019. All three tribes responded requesting consultation under AB 52.

Formal tribal consultation for the Project was carried out by the City in coordination with Caltrans District 1 Archaeologists on July 19, 2019, September 26, 2019, and October 9, 2019. Completion of the AB 52 process has been formalized in a completion letter to the three local THPOs, dated December 15, 2020. Consultation outcomes are further discussed in Section 3.5 (Cultural Resources) and Section 3.18 (Tribal Cultural Resources).

1.10 Public Review Process

This draft MND will be circulated to local, responsible, and trustee agencies, interested organizations, and individuals who may wish to review and provide comments on the project description, the proposed mitigation measures, or other aspects of the report. The publication will commence the 30-day public review period per CEQA Guidelines §15105(b).

The draft MND and supporting documents are available for review:

- By appointment at the Arcata City Hall,736 F Street, Arcata, CA 95521.
- Via written request for a copy from the City.
- Electronic Copies of the report are available for review at: https://www.cityofarcata.org/720/Old-Arcata-Road-Design-Project

Written comments or questions regarding the draft MND should be submitted to the name and address indicated below. Submittal of written comments via e-mail will greatly facilitate the response process.

Phone: (707) 822-5955

email: comdev@cityofaracta.org

The proposed MND, along with any comments, will be considered by the City Council when hearing the project.

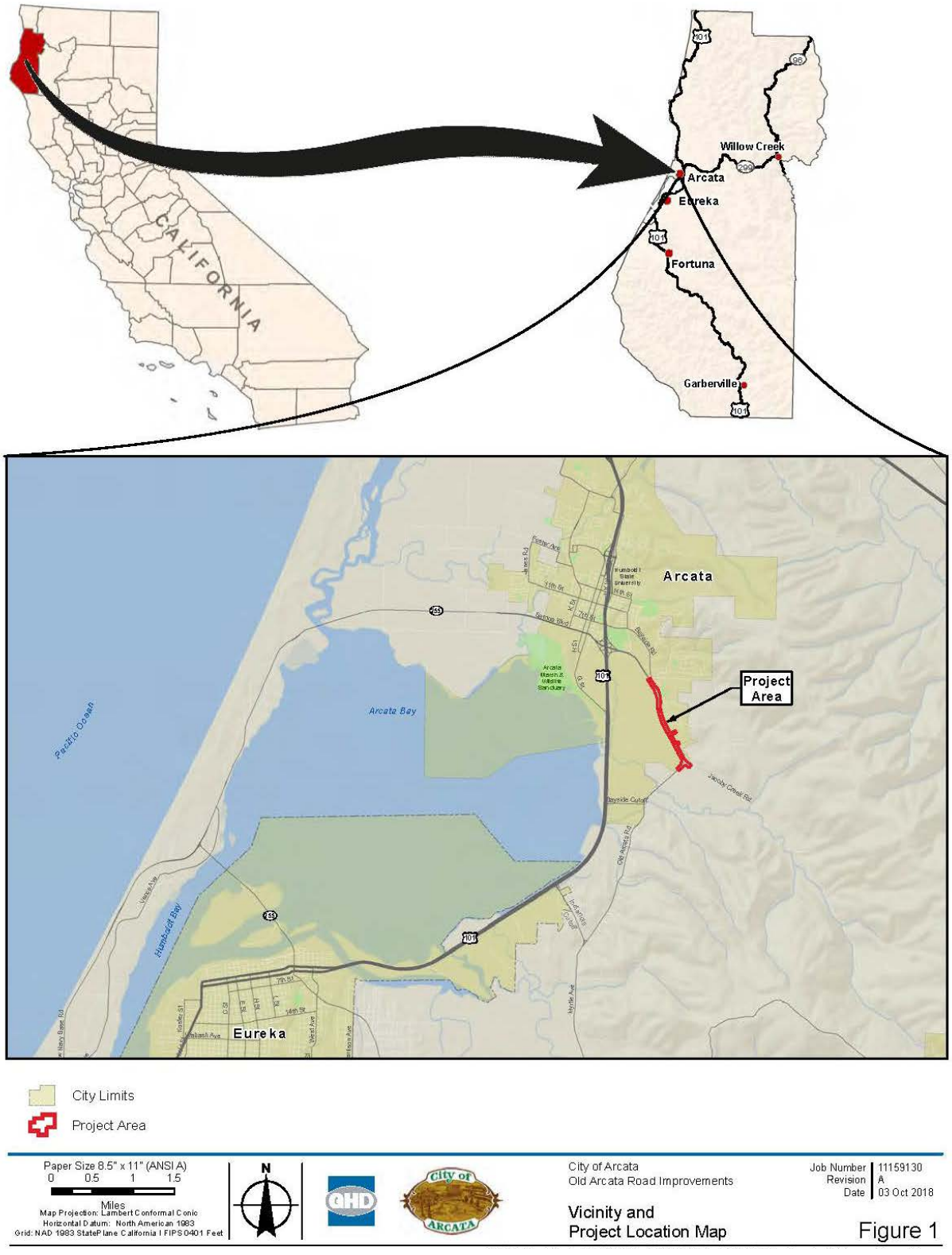

Figure 1-1 Vicinity Map

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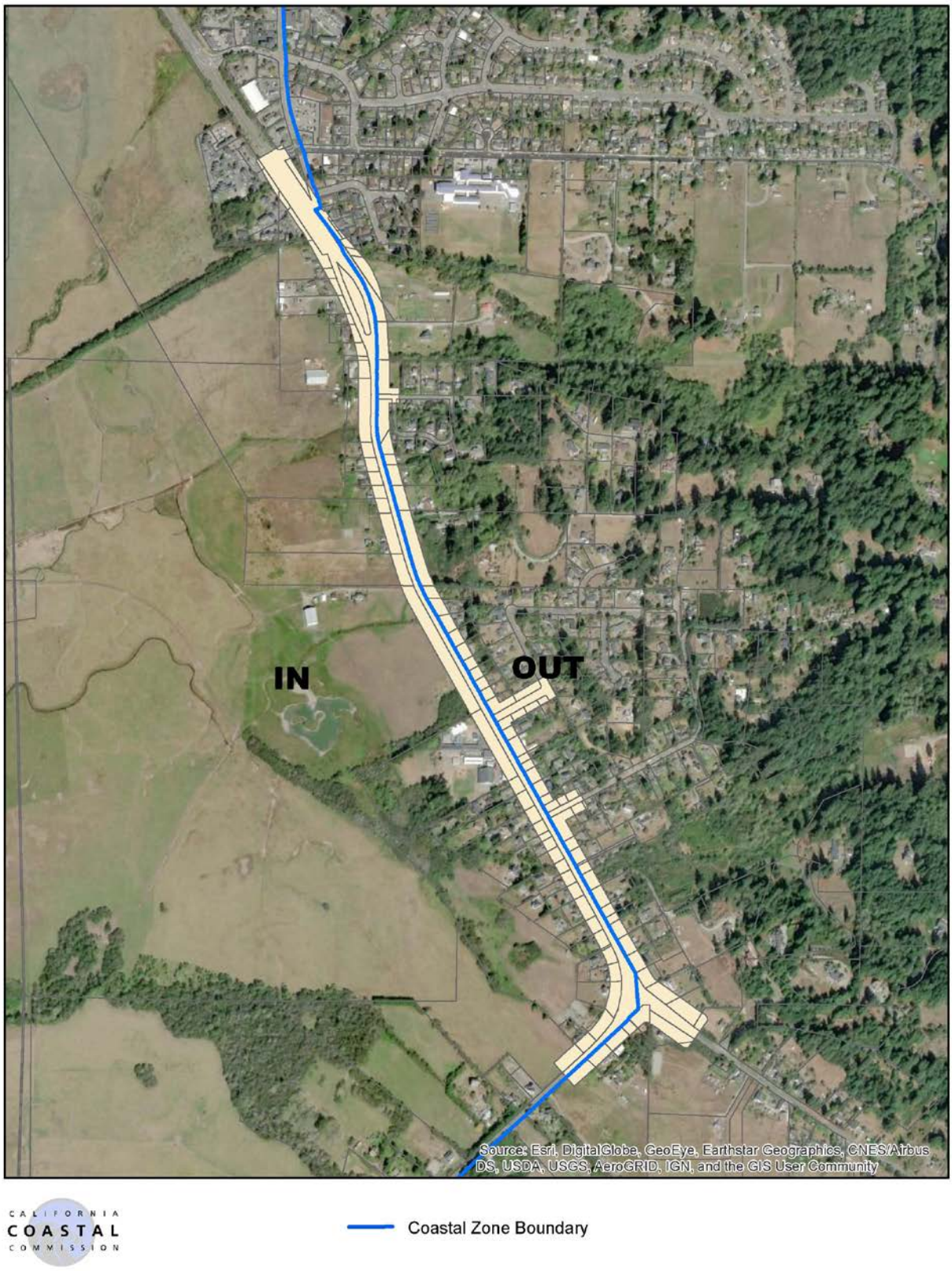

Figure 1-2 Coastal Zone Boundary with Respect to the Project Area

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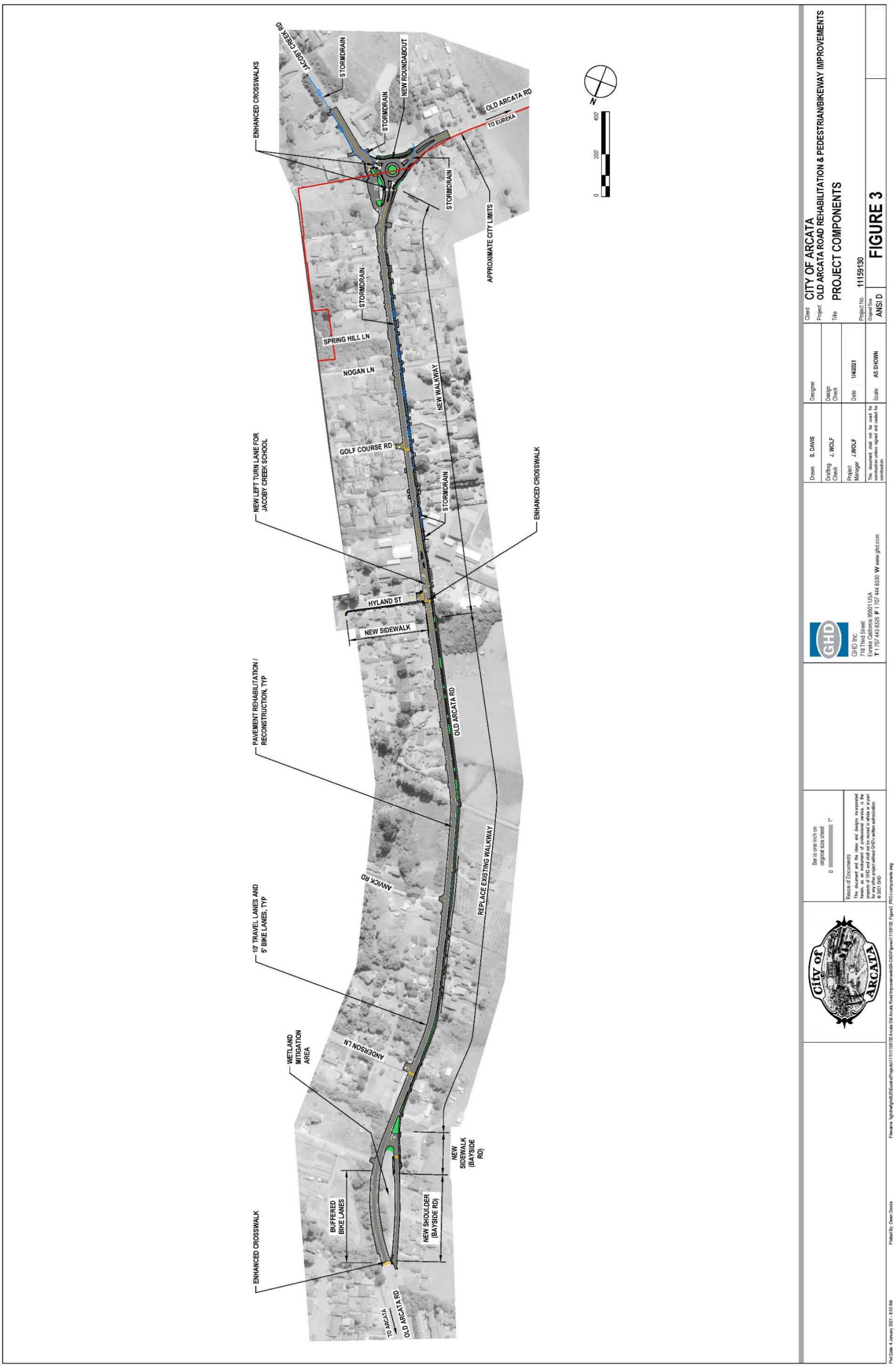

Figure 1-3 Project Components

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2. 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. Where checked below, the topic with a potentially significant impact would be addressed in an environmental impact report:

☒ 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.

Signature: David Loya, City of Arcata

1/14/21

Date

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3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the Project:				
a) Have a substantial adverse effect on a scenic vista?			✓	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public 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?			✓	

Impact analysis in this section is based upon a visual resource evaluation conducted for the Project (GHD 2020). The visual resource evaluation documented potential and anticipated visual changes. Visual changes and associated effects were demonstrated by identifying visual resources in the Project Area, analyzing the amount of change that would occur as a result of the Project.

Visual resources within the Project Area include rural pastoral views west toward Humboldt Bay, residential and rural residential neighborhoods, and eastern views into the coastal mountain foothills. Project activities include repaving a segment of Old Arcata Road, improving and extending the existing pedestrian walkway alongside Old Arcata Road, and improving and adding sidewalks and curbs. A new roundabout would also be constructed at the Jacoby Creek Road intersection, which would result in a visual change. Existing street lights are located at the Jacoby Creek Road intersection.

a) Have a substantial adverse effect on a scenic vista? (Less Than Significant Impact)

Investments in road infrastructure for both motorized and non-motorized traffic include elements that are not typical for Old Arcata Road, including the Project corridor. Historically infrastructure improvements have not focused on the Project corridor. As a result, as road use has grown, and

both vehicle and non-vehicular traffic increased on the road, investment in commensurate changes to road infrastructure have not been made. For example, currently sidewalks are limited in the area, paving is deteriorated, travel lanes are not well segregated, and bike lanes are non-existent. The Project corridor looks much as it has for the last several decades.

This look and feel of a rural setting is in part related to the road lacking this critical safety infrastructure. The Project will change the look and feel of the road. The aesthetic quality of Old Arcata Road will be different after the project. However, the visual change will have a minor impact on the overall rural aesthetic in the area. The road, the new paving, the safer segregated walkways, and the roundabout will not affect the sweeping views of Arcata Bay, the forested foothills, or the historic character of the area. These features, which contribute far more to the rural character of the Project corridor and surrounding vicinity would not be affected at all by the project. The minimal changes related to the road improvements will have an insignificant effect on the environment.

The visual resource evaluation concluded that Project elements are low in elevation (at or near the ground elevation) and would not significantly obstruct or alter existing visual resources along the Project corridor (GHD 2020).

The proposed road cross-section maintains a rural road aesthetic while providing safety improvements to better manage the levels of pedestrian and bicycle traffic the road also experiences. Implementation of the Project would not block or alter the existing views or the pleasant rural character of project corridor. The existing viewscape would not be impeded or altered by structures or other project elements. The planned retaining wall near the Jacoby Creek intersection would be approximately one foot above road grade. Depending on the final design grades, a fence (approximately four feet tall) would be attached to the top of the retaining wall. The fence would be transparent (most likely vinyl coated black chain link). A fence of similar style would also be installed on the opposite side of Old Arcata Road in front of the City pump station. The retaining wall and fencing would not impede views within or adjacent to the project corridor or otherwise diminish the visual character of the vicinity (GHD 2020).

New concrete for the retaining wall and other concrete improvements throughout the project corridor including the roundabout apron, sidewalk, and walkways would include integral color to darken the concrete and provide a “weathered look” designed to blend into the existing community aesthetic and character and avoid a stark visual alteration. Stamped and colored concrete would be applied to roadway dividing medians and the roundabout truck apron that would surround the inner landscaped focal point (GHD 2020).

Trees removed during construction would be replaced in other nearby locations. All tree plantings associated with the project would include appropriate tree species designed to blend into mature vegetation surrounding the intersection designed to blend into mature vegetation surrounding the Project (GHD 2020).

The Project would improve the visual streetscape and encourage non-motorized transportation. The existing rural residential character would not be altered by the Project. Jacoby Creek Elementary School, roadside gardens, small businesses, and distant views of bottom lands and coastal mountain forest hillsides would remain unimpeded. Allowable traffic speeds and traffic volumes would not increase as a result of the project. Tall or larger structures that could impede the viewshed of the Project corridor or otherwise result in a significant visual change are not included in the Project. Significant vegetation and tree removal would not occur. Residences, businesses, and structures adjacent to the project corridor would not be altered (GHD 2020).

Construction-related visual effects, including raw earth work and the presence of heavy machinery, would be temporary and short-term. The impact would be less than significant.

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

Old Arcata Road is not a designated or 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? (Less Than Significant Impact with Mitigation)

Temporary visual impacts related to construction include the removal of roadside vegetation, presence of heavy machinery, materials stockpiling and storage, and construction-related safety signage and safety dividers.

The Project would not block or alter the existing views of the rural character of Project corridor. The existing viewscape would not be impeded or altered by structures or other Project elements. The views of the Project itself would be relatively limited as the project consists mostly of a narrow paved surfaces with few vertical features, such as resurfaced roadway, and re-striped lanes and crosswalks. Although some vegetation would be removed to accommodate the Project, the remaining existing vegetation and proposed wetland plantings, stormwater buffer strips, and a vegetated roundabout center would soften visual changes. Throughout the Project corridor, new concrete for sidewalk and walkways would include integral color to darken the concrete and provide a “weathered look” designed to blend into the existing community aesthetic and character and avoid a stark visual alteration. Neighbors and users of the road would not be negatively impacted by the views of the proposed Project (GHD 2020).

Operational visual changes would include upgrades to safety and directional signage and the addition of a new roundabout at the Jacoby Creek Road intersection, and a new left turn lane at Jacoby Creek Elementary School. The roundabout’s center island would be revegetated, which would soften the visual effect of the hardscaped feature. Plantings would be consistent with other City roundabouts and public right-of-ways, including grasses and/or other drought tolerant species. All new plantings would be designed to maximize connectivity with existing landscaping and mature trees.

The Project would be compatible with the existing visual character of the proposed Project alignment and its surroundings, and would not introduce any elements that would degrade existing visual character or quality. Construction activities along the Project corridor and at off-site staging areas would result in short-term temporary changes in the visual character of the Project Area during and immediately following construction. The Project may have a beneficial effect on the overall visual quality of the Project corridor, including new asphalt pavement, sidewalks, pathways, speed humps, and curbs. These specific features, along with the overall improvements along Old Arcata Road, including repaved bicycle lanes, may improve the overall visual quality of the roadway. With the incorporation of Mitigation Measure AES-1, the impact would be less than significant.

Mitigation Measures

Mitigation Measure AES-1: Minimize Temporary Visual Impacts

The City shall avoid or substantially lessen impacts by reducing construction disturbance. Measures shall include:

- The size of construction zones and staging areas shall be the minimum operable size. The location of such zones shall be adjusted to minimize the visual impacts.
- To the extent feasible, alignments and locations of facilities shall be adjusted to avoid visually sensitive features and conditions that would result in major landform alteration or mature landscape removal.
- The City shall restore or revegetate staging areas disturbed by construction activities, including restoring pre-Project topographic features and reseeding with species comparable to those removed or disturbed during construction.

Mitigation Measure AES-1 would reduce the Project impact on visual character to a less-than-significant level by minimizing and restoring areas disturbed during construction.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (Less Than Significant Impact)

Proposed street lighting at the roundabout could change the night-time visual resources by providing additional street lights to the area. Lighting would be designed to meet City standards and would protect wildlife and nighttime views, including views of the night sky. Specific dark sky compliant design elements that would be applied to Project lighting include: fixture types, cut off angles, shields, lamp arm extensions, and pole heights. Specific design preferences include directing light downward and away from other properties, avoiding brightly illuminated vertical surfaces where feasible, such as walls and lamp poles, and directing lighting away from sensitive habitat areas. With the implementation of theses design elements and preferences, the potential effect would be less than significant.

3.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
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 is located in an existing transportation corridor and would not directly or indirectly affect land zoned or used for agricultural or forest purposes. The City's Resource Conservation and Management Element includes among its planning principles and goals the protection and enhancement of prime agricultural lands for their food production, resource, and aesthetic values (Policy RC-5a). The Humboldt County General Plan Land Use element emphasizes the preservation of agricultural lands (Goal AG-G1) and includes policies to conserve agricultural lands (Policy AG-P5) and avoid conversion of agricultural lands (Policy AG-P6; Humboldt County 2017c).

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

The Project would not be located on land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide importance (Humboldt County 2019). No impact would occur.

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

The Project would not be located on land enrolled in a Williamson Act contract (Humboldt County 2019). No impact to such lands would occur.

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

The Project would not be located on land zoned for forest land, timberland, or timber production (Humboldt County 2019). In addition, there are no forest lands in the Project Area. Therefore, the Project would not result in the loss or conversion of forest land. No impact would occur.

e) Convert Farmland or Forest? (No Impact)

The Project is not presently located on property used for farmland or forest production and would not impact any such uses. The Project is consistent with City of Arcata planning regulations and the Humboldt County General Plan. The Project would not involve changes in the existing environment which could result in conversion of farmland in the Project Area. No impact would occur.

3.3 Air Quality

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporation	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?			✓	

Heavy machinery utilized during construction result in emissions and dust within the Project corridor, which includes sensitive receptors immediately adjacent to Old Arcata Road including students at Jacoby Creek Elementary School and nearby residential users. Air quality in the Project Area is regulated by the North Coast Unified Air Quality Management District (NCUAQMD).

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

This impact relates to consistency with an adopted attainment plan, and generation of a localized criteria pollutant impact. A potential localized impact would be an exceedances of State or federal standards for particulate matter (PM_{10}) emissions. PM_{10} is of concern during construction because of the potential to emit fugitive dust during earth-disturbing activities.

The NCUAQMD is responsible for monitoring and enforcing local, state, and federal air quality standards. The U.S. Environmental Protection Agency (EPA) sets the National Ambient Air Quality Standards for the following six 'criteria' air pollutants: ozone, particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide, carbon monoxide, lead, and sulfur dioxide. The California Air Resources Board (ARB) administers the California Ambient Air Quality Standards, which include the six criteria pollutants listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

Humboldt County is designated 'attainment' for all National Ambient Air Quality Standards. With regard to the California Ambient Air Quality Standards, Humboldt County is designated attainment for all pollutants except PM_{10}. Humboldt County is designated as "non-attainment" for the state's PM_{10} standard. To address non-attainment for PM_{10}, the NCUAQMD adopted a Particulate Matter Attainment Plan in 1995. This plan presents available information about the nature and causes of PM_{10} standard exceedances and identifies cost-effective control measures to reduce PM_{10} emissions to levels necessary to meet California Ambient Air Quality Standards.

PM_{10} refers to inhalable particulate matter with an aerodynamic diameter of less than 10 microns. PM_{10} includes emission of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} emissions include smoke from wood stoves, construction dust, open burning of vegetation, and airborne salts and other particulate matter naturally generated by ocean surf. Because, in part, of the large number of wood stoves in Humboldt County and because of the generally heavy surf and high winds common to this area, Humboldt County has exceeded the state standard for PM_{10} emissions. Therefore, any use or activity that generates airborne particulate matter may be of concern to the NCUAQMD. The proposed Project would create PM_{10} emissions in part through vehicles coming and going to the Project site and the construction/renovation/demolition associated with the Project.

Pursuant to Air Quality Regulation 1, Chapter IV, Rule 430 – Fugitive Dust Emissions, 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: (1) covering open bodied trucks when used for transporting materials likely to give rise to airborne dust; and (2) the use of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land. The proposed Project includes grading and construction activities.

As described in Environmental Protection Action 1 (see Section 1.7.1), the Project would be required to prepare and adhere to a SWPPP prior to construction, to ensure compliance under the required Construction General Permit administered by the North Coast Regional Water Quality Control Board. The SWPPP would include dust control measures, as a matter of standard protocol. Dust control measures in the SWPPP would reduce potential fugitive dust emission and particulate matter impacts, providing consistency with Quality Regulation 1, Rule 104 (D), Fugitive Dust Emissions. Dust control measures in the SWPPP would specifically include requirements that the City and its contractor:

- Water all active construction areas regularly to limit dust; control erosion and prevent water runoff containing silt and debris from entering the storm drain system.
- Cover trucks hauling soil, sand, and other loose material.
- Sweep paved streets, access roads and parking areas daily if visible material is carried onto adjacent public streets.

Any potential impact would be less than significant.

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 Impact)

This impact is related to regional criteria pollutant impacts. As identified in Impact Section 3.3 (a) above, Humboldt County is designated nonattainment of the State's PM_{10} standard. Humboldt County is designated attainment for all other state and federal standards.

For construction emissions, the NCUAQMD has indicated that emissions are not considered regionally significant for projects whose construction would be of relatively short in 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 (NCUAQMD 2019).

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
- PM10 – 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.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was used to estimate air pollutant emissions from Project construction (Appendix A). Construction of the Project is expected to begin in late spring and require approximately six to eight months to complete. Detailed construction equipment activity was estimated based on Project construction components.

Table 3.3-1 summarizes construction-related emissions. As shown in Table 3.3-1, the Project's construction emissions would not exceed the NCUAQMD's stationary sources emission thresholds. Therefore, the Project's construction emissions are considered to have a less than significant impact.

Table 3.3-1 Construction Regional Pollutant Emissions

Parameter	Emissions (tons per year)			
	ROG	NO_x	CO	PM_{10}
Project Construction	0.06	0.54	0.63	0.3
NCUAQMD Stationary Source Thresholds	40	40	100	15
Significant Impact? (Yes/No)	*No*	*No*	*No*	*No*

Following construction, the Project would not include any stationary sources of air emissions, traffic capacity enhancements, or any increase in levels of traffic over existing conditions. The proposed roadway improvements will likely increase multi-modal use of the roadway which may decrease vehicle trips and associated emissions. Vehicle trips associated with operation and maintenance of the road would include annual inspections, repaving, painting, and repairs as needed. Operation and maintenance of the Project would generate less than one traffic trip per week on average. However, larger repairs to the road or sidewalk facilities may take several weeks to complete depending on the extent of damage and other circumstances. The Project would not result in substantial long-term operational emissions of criteria air pollutants. Therefore, Project-generated operational emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment. The Project's contribution to a cumulative impact would be less than significant.

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

Activities occurring near sensitive receptors should receive a higher level of preventative planning. Sensitive receptors include school-aged children (schools, daycare, playgrounds), the elderly (retirement community, nursing homes), the infirm (medical facilities/offices), and those who exercise outdoors regularly (public and private exercise facilities, parks). Sensitive receptors immediately adjacent to the Project corridor include residences, Sunny Brae Middle School, Jacoby Creek Elementary School, community gardens, and small businesses.

Idling times for trucks and equipment would be limited to five minutes, as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR], which also ensures construction equipment is maintained in accordance with manufacturer's specifications.

The Project would include more than one staging area due to its linear nature. The southern potential staging area would be located approximately 1,700 feet or greater from sensitive receptors at the Jacoby Creek Elementary School and adjacent community garden and businesses and adjacent to sensitive receptors at Mistwood School. The northern potential staging area would be located approximately 400 feet from a community garden and 700 feet or greater from sensitive receptors at Sunny Brae Middle School. Project construction activities would largely be linear in nature, and not include intensive or prolonged construction equipment use in any one location.

Project construction activities are not expected to occur for a substantial amount of time. Due to the relatively short length of the construction period, the distance from the majority of construction activities, and the implementation of fugitive dust control measures, the Project would not result in the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, the construction-related impact would be less than significant.

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

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

The Project would not create odors that could reasonably be considered objectionable by the general public because no aspect of Project construction is anticipated to create objectionable odors except for limited exhaust fumes from gas powered equipment. Therefore, impacts would be less than significant.

3.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
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 evaluation of potential impacts to biological resources is based on results from the Natural Environment Study (NES) completed for the Project, which includes by appendix a wetland delineation, rare plant evaluation, and EHSA evaluation (Northstar Environmental 2019; Appendix B – Natural Environment Study). Biological resources were evaluated with respect to the established Biological Study Area (BSA), which covers the extent of the proposed impact area plus a buffer zone of five to ten feet around the perimeter. The BSA was also extended north to include the existing roundabout at Buttermilk Lane.

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)

The NES reviewed special status species with the potential to occur in or near the BSA and reviewing online and hard copy resources, agency database requests, and agency consultation. The USFWS Information for Planning and Consultation (IPaC) website was consulted for a list of federally-listed species and critical habitat that might be present. Additionally, the CNDDB list of Federally and State-listed species was reviewed for species that may potentially occur in the area. Surveys indicated there were no listed plant species or their potential habitats within the BSA.

Special-status Amphibian Species

While aquatic habitat is not present in the BSA, potential habitat exists for the Northern Red-legged Frog *(Rana aurora)* adjacent to the BSA. Therefore, there is a potential for impact to Northern Red-legged Frogs if they are present within the BSA during construction activities. Impacts to Northern Red-legged Frogs could potentially occur to egg masses or tadpoles within wetted areas, or to adults out of water, on land, post breeding. Impacts to egg masses or tadpoles are unlikely due to the limited amount of standing water. Potential direct effects to adults may include harassment, injury, and mortality due to equipment and vehicle traffic and construction-related ground disturbance in wetland areas. These direct effects could occur in freshwater areas (e.g. ditches ponding water along the roadside) located within the proposed BSA or in adjacent terrestrial habitat with herbaceous vegetation. The species may be indirectly affected if construction activities result in degradation of adjacent or nearby aquatic habitat and water quality due to erosion and sedimentation, accidental fuel leaks, and spills leaving the Project site. Construction may unavoidably span the breeding season, which can commence as early in November when Northern Red-legged Frogs begin to congregate at breeding sites. While peak breeding is typically in January and February, breeding can extend as late as March. Mitigation Measure BIO-1 would be implemented to reduce the potential impact to Northern Red-legged Frogs to be less than significant.

Special-status Plant Species

On June 18 and July 31, 2018 the BSA was surveyed in an effort to identify if federal, state and/or CNPS listed plant species were present. No special status species were observed during the protocol level surveys in 2018 within the BSA. Vegetation mapping to screen for Environmentally Sensitive Habitat Areas (ESHA) occurred on August 31, 2018 and September 20, 2018. Within the assessment area, three sensitive plant communities have a documented potential to exist according to the CNDDB, including upland Douglas-fir forest, northern coastal salt marsh, and northern foredune grassland (CDFW 2018a). None of these communities were observed within the BSA. Palustrine emergent persistent wetlands, palustrine broad-leaved deciduous scrub-shrub wetlands, and 1-parameter wetlands occur within the BSA. The 1-parameter wetlands meet the Coastal Commission requirements based on dominance of wetland (FAC or wetter) vegetation, in this case willows (*Salix* spp.). All wetlands occurring within the BSA are addressed in Appendix B – Natural Environment Study.

Special-status Fish Species

Beith Creek crosses under Old Arcata Road in a culvert south of the Buttermilk Lane roundabout within the BSA, approximately 50 feet north of the Project. The culvert and surrounding waters would be excluded from Project activities. Standard BMPS for erosion control would be implemented to ensure Beith Creek is unaffected by construction activities near the northern end of the Project, closest to the tributary. Special-status fish species in the unnamed tributary would not

be impacted.

Special-status Wildlife Species

No special status animal species were identified within the BSA (Northstar Environmental 2019). The USFWS IPaC website was consulted for a list of federally-listed species and critical habitat that might be present within the proposed Project and the BSA (USFWS 2019).

Passerines and Raptors

While the Northern Spotted Owl *(Strix occidentalis caurina)* does occur in the region, its habitat is absent from the BSA. No special status passerines and raptors were identified within the BSA (Northstar Environmental 2019). The USFWS IPaC website was consulted for a list of federally-listed species and critical habitat that might be present within the proposed Project and the BSA (USFWS 2019).

Bats

No special status bats were identified within the BSA (Northstar Environmental 2019). The USFWS IPaC website was consulted for a list of federally-listed species and critical habitat that might be present within the proposed Project and the BSA (USFWS 2019). Given no special status species were occur in the BSA, and the BSA is limited to a developed transportation corridor, the potential impact is less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Avoidance and Minimization Measures for Red-Legged Frogs

Although Northern Red-legged Frog breeding is not documented in the project area, measures for this species are included because individual frogs may disperse for considerable distances and could enter construction areas. Mitigation Measure BIO-1 is proposed to minimize potential impacts to Northern Red-legged Frogs:

1. The City shall retain a qualified biologist to perform a pre-construction survey for the Northern Red-legged Frog within 24 hours prior to commencement of ground disturbance within 50 feet of suitable Northern Red-legged Frog habitat. Suitable habitat will be determined by the City's qualified biologist. The biologist will relocate any specimens that occur within the work-impact zone to nearby suitable habitat.
2. In the event that a Northern Red-legged Frog is observed in an active construction zone, the contractor shall halt construction activities in the area and the frog shall be moved to a safe location in similar habitat outside of the construction zone.

Mitigation Measure BIO-1 requires avoidance and minimization of direct and indirect impacts to Northern Red-Legged Frogs during construction, thereby reducing any potential impacts to Northern Red-legged Frogs to a less-than-significant level.

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? (No Impact)

No sensitive vegetation alliances, including riparian, were identified within the BSA based on CDFW's *Hierarchical List of Natural Communities* (CDFW 2018b). Some individual redwood trees (*Sequoia*

sempervirens) occur within the BSA. On the northern end of the BSA near the Buttermilk Lane roundabout, there are a few young redwood trees that appear to have been planted. North of Jacoby Creek Elementary School, between a fence line and the sidewalk, there are two mature redwood trees and a small (<5 feet. tall) sapling located between the two larger trees. The *Sequoia sempervirens* Forest Alliance has a Global listing of G3 and State Ranking of S3 (CDFW 2018b). None of the redwood trees within the BSA are connected to a forest and therefore they do not constitute a Forest Alliance. Redwood trees are not considered special-status plant species as individuals and are not considered ESHA. There would be no impact.

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).

The BSA consists of two types of identified U.S. Army Corp of Engineers (USACE) jurisdictional wetlands that were classified using Cowardin nomenclature from *Classification of Wetlands and Deepwater Habitats of the United States* (Federal Geographic Data Committee 2013), Palustrine Emergent Persistent Wetlands and Palustrine Broad-leaved Deciduous Scrub-Shrub Wetlands. The BSA also contains 1-parameter wetlands meeting Coastal Commission requirements based only on wetland (FAC or wetter) vegetation (lack of hydric soils and wetlands hydrology). These wetlands were mapped based on dominant native vegetation as 1-Parameter Willow Series. The 1-Parameter Willow Series was mapped to the willow canopy dripline. Areas where the canopy extends over pavement were also mapped. No 2-parameter wetlands were identified. Figures 2:1-5 of Appendix B –Natural Environment Report shows the results of the wetland delineation.

The Palustrine Emergent Persistent Wetland and the Palustrine Scrub-Shrub, Broad leaved Deciduous Wetlands occurred primarily within roadside ditches along the northeast side of Old Arcata Road. The Palustrine Emergent Persistent Wetland consisted primarily of an herbaceous layer and the Palustrine Scrub-Shrub, Broad leaved Deciduous Wetlands consisted of tree, shrub, and herbaceous vegetation layers. Willow species (*Salix* spp.) were the dominant trees in the shrub-scrub wetlands often occurring with Himalayan blackberry (*Rubus armeniacus*) and California blackberry (*Rubus ursinus*) in the shrub layer. Hydrophytic vegetation was dominant within all wetland areas.

In summary, 0.16 acres of 3-parameter Palustrine Emergent Persistent Wetlands, 0.24 acres of 3-parameter Palustrine Broad-leaved Deciduous Scrub-Shrub Wetlands, and 0.08 acres of 1-Parameter Willow Series were identified within the BSA (not including the area where the willow canopy dripline extended over pavement).These wetlands are largely omitted from the construction boundary to avoid potential impacts. Impacts to a small wetland area along Jacoby Creek Road would be unavoidable, including a very small poor-quality wetland area located in a highly used ditch/parking area along Jacoby Creek Road near the intersection of Old Arcata Road. Any wetland impacts and potential mitigation thereof resulting from Project activities would be fully reviewed through the formal USACE and NCRWQB CWA Section 404 and 401 permitting processes. As described under Mitigation Measure BIO-3, wetland mitigation would occur at a ratio no less than 1:1 and to the satisfaction of the City and permitting agencies. The identified wetland mitigation area at the north end of the project corridor is sufficiently sized to meet potential wetland mitigation needs, even if the final ratio required by the City and permitting agencies exceeds 1:1 (Figure 1-3.).

In addition, the Project would adhere to Environmental Protection Action 1 to prepare a SWPPP prior to construction and required by the North Coast Regional Water Quality Control Board (see Section 1.7.1). Measures to protect water quality, Waters, and wetlands within or near the Project

footprint specifically would include:

- Within 10 days of completion of construction in those areas where subsequent ground disturbance would not occur for 10 calendar days or more, disturbed areas shall be temporarily stabilized to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent possibility of rain within the next 24 hours, as forecasted by the National Weather Service, appropriate BMPs would be installed upon completion of the day's activities to control erosion and prevent sediment laden stormwater from leaving the construction area.
- Suitable perimeter control BMPs, such as silt fences, or straw wattles shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These BMPs shall be installed prior to any clearing or grading activities.
- Spoil and stockpile sites shall be located such that they do not drain directly into a surface water feature, if possible. If a spoil site drains into a surface water feature, swales shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated to reduce the potential for erosion.
- Sediment control measures shall be in place prior to the onset of the rainy season and would be monitored and maintained in good working condition until disturbed areas have been revegetated.
- A site-specific spill prevention plan shall be implemented for potentially hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features.
- Equipment and hazardous materials shall be stored 50 feet away from surface water features. Fuelling of equipment shall take place great than 75 feet from any surface water feature.

Potential impacts to wetlands would be less than significant with the incorporation of Mitigation Measures BIO-2 and BIO-3

Mitigation Measures

Mitigation Measure BIO-2: Avoidance and Minimization Measures for Waters of the United States

The City shall implement the following avoidance and protection measures for Waters of the United States and Waters of the State:

1. The City shall attempt to avoid or minimize impacts to wetlands/waters to the greatest extent feasible in the final design plans.
2. Areas where wetlands are to be filled shall be clearly identified in the construction documents and reviewed by the City prior to issuing for bid.

Mitigation Measure BIO-3: Compensatory Mitigation for Wetlands Impacts

The City shall compensate for wetlands impacts through restoration, rehabilitation, and/or creation of wetland at a ratio of no less than 1:1 and to the satisfaction of the City and permitting agencies. A Wetlands Mitigation and Monitoring Plan shall be prepared in

coordination with the NCRWQB. Compensation for wetlands shall occur so there is no net loss of wetland habitat at ratios to be determined in consultation with the NCRWQCB.

The Plan shall be acceptable to the NCRWQCB and include the following elements: proposed mitigation ratios; description and size of the restoration or compensatory area; site preparation and design; plant species; planting design and techniques; maintenance activities; plant storage; irrigation requirements; success criteria; monitoring schedule; and remedial measures. The Plan shall be implemented by the City.

Mitigation Measures BIO-2 and BIO-3 requires avoidance and minimization of permanent impacts and temporary impacts to wetlands during construction, restoration of pre-Project conditions at the conclusion of construction, and compensation of wetlands thereby reducing any potential impacts to wetlands to a less-than-significant level.

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? (Less Than Significant Impact with Mitigation)

As stated above, Beith Creek or any other aquatic habitats would not be affected and are located outside the bounds of construction. Thus, migratory fish species are also not present in the BSA. The Project Area may contain habitat suitable for nesting migratory birds. Species with the potential to be affected by Project activities are those that nest in the vegetation and trees adjacent to Old Arcata Road. In order to avoid potential direct impacts to nesting birds, tree and vegetation removal would occur outside of the established nesting bird window. If tree and vegetation removal must occur within the established nesting bird window, a qualified biologist would conduct nest surveys and establish buffers. Indirect impacts to nesting birds may include construction-related noise, which would be considered by the qualified biologist when establishing buffer distances under Mitigation Measure BIO-5. The impact would be less than significant with the incorporation of Mitigation Measures BIO-4 and BIO-5.

Mitigation Measures

The following Mitigation Measures shall be implemented to avoid or minimize the potential for Project-related impacts on migratory birds that have no other special-status:

Mitigation Measure BIO-4: Remove Vegetation Outside of Nesting Bird Season

The City would attempt to remove trees and other vegetation that could potentially contain nesting birds outside the bird nesting season (August 16th and March 14th).

Mitigation Measure BIO-5: Conduct Nest Survey and Establish Buffers

If vegetation removal or ground disturbance cannot be confined to work outside of the nesting season, a qualified ornithologist shall conduct pre-construction surveys within the vicinity of the Project Area, to check for nesting activity of native birds and to evaluate the site for presence of raptors and special-status bird species. The ornithologist shall conduct a minimum of one day pre-construction survey within the 7-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 breeding season, a qualified biologist shall conduct a supplemental avian pre-construction survey before project work is reinitiated.

If active nests are detected within the construction footprint or within the construction buffer established by the Project biologist, 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 construction (disturbance) footprint, but within construction buffer, nest 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 California Department of Fish and Wildlife (CDFW). Buffer sizes would take into account factors such as (1) roadway and other ambient noise levels, (2) distance from the nest to the roadway and distance from the nest to the active construction area, (3) 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;(4) distance and amount of vegetation or other screening between the construction site and the nest; and (5) sensitivity of individual nesting species and behaviors of the nesting birds.

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

Mitigation Measures BIO-5 requires avoidance and minimization to avoid potential impacts to migratory birds by removing vegetation outside of the nesting season. If the nesting season cannot be avoided, Mitigation Measure BIO-5 further avoids potential impacts by requiring surveys for nesting birds by a qualified biologist and the establishment of buffers. With the implementation of Mitigation Measures BIO-4 and BIO-5, the potential impact to migratory birds would be less than significant.

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

It is anticipated that less than five single trees greater than 16 inches in diameter may need to be removed. Single trees are located in the jurisdiction of Humboldt County. A group of 30 or more trees with diameters less than 10 inches would not be removed.

City of Arcata

The City of Arcata General Plan's Resource Management and Conservation Element establishes policies to protect biological resources within City Limits including protected streams and wetlands (City of Arcata 2008). Applicable policies include:

- RC-1 Natural Biological Diversity/Ecosystem Function, and
- RC-3 Wetlands Management.

The Project would not conflict with policies RC-1 and RC-3. In addition, City projects are not

required to obtain City permits, such as tree removal permits. Thus, a City of Arcata tree removal permit would not be required for the project.

Humboldt County

The Open Space and Conservation Element of the Humboldt County General Plan (2017b) summarizes policies germane to the protection of biological resources. Applicable policies include:

- BR-P1: Wetland Identification,
- BR-S10: Development Standards for Wetlands, and
- BR-S11: Wetlands Defined.

Policy BR-S10 established that development standards for wetlands shall be consistent with the standards for Streamside Management Areas (SMA). The SMA width for applied to wetlands is designated as 50 feet for seasonal wetlands and 150 feet for perennial wetlands. The setback begins at the edge of the delineated wetland. Humboldt County does regulate tree removed for trees larger than 12 inches in diameter that are in residential zones through a Special Permit. A Special Permit would be sought for any qualifying single tree within the jurisdiction of the County to be removed.

Given the Project would obtain permits from the USACE and NCWQCB to ensure compliance with Sections 401 and 404 of the CWA to evaluate any potential impacts to wetlands as described in Mitigation Measures BIO-2 and BIO-3, ensure adherence to the City policies RC-1 and RC-3, obtain a Tree Removal Permit from the City of Arcata and Humboldt County, and comply with the biological resource policies included in Humboldt County's Open Space and Conservation Element, the potential impact would be less than significant.

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

There are no adopted Habitat Conservation, Community Conservation, or approval local, regional, or state habitat conservation plans that apply to the Project Area. There would be no impact.

3.5 Cultural Resources

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

This section evaluates the potential impacts related to cultural resources resulting from construction and operation of the Project. Impact assessment is based upon historic and cultural resource investigations detailed in the Project's Historic Property Survey Report (HPSR, JRP 2020b) and Archaeological Survey Report (ASR, William Rich and Associates [WRA] and Pacific Legacy 2020). The HPSR built upon the Historic Resources Report, which also focused on built resources (JRP 2020, Appendix C). Two Extended Phase 1 (subsurface) archaeological investigations were also completed, in support of the project (WRA and Pacific Legacy 2020).

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (Less Than Significant)

A significant effect to an historical resource per CEQA statue would be constituted by a physical or clear immaterial substantial adverse change to 1) an historic district; 2) a potentially historic district; 3) a listed local, state, or national register historic property; 4) or a property potentially eligible for listing on a local, state, or national register. These four scenarios are analyzed below.

The Historic Property Survey Report and Historic Resources Report completed by JRP Historical Consulting evaluated resources along the Project corridor (JRP 2020, JRP 2020b, Appendix C). These evaluations examined standard sources of information that identify known and potential historic resources to ascertain whether any buildings, structures, objects, districts, or sites have been previously recorded or evaluated in or near the project study area. This included reviewing the California Historical Landmarks and Points of Interest publications and updates, National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) listings, and the California Historical Resources Information System list for Humboldt County.

JRP concluded the Project would not result in the physical demolition, destruction, relocation, or alteration of any of the built resources addressed in the report or any other building along the project route (JRP 2020). The Historic Property Survey Report evaluated three parcels with built environment resources that are 45 years old or older are in the APE: 2212 Jacoby Creek Road (Old Jacoby Creek School), 1928 Old Arcata Road (Temperance Hall), and 2297 Jacoby Creek Road (Bayside Ground). The building at 2212 Jacoby Creek Road is the Old Jacoby Creek School, which was listed in the National Register of Historic Places (NRHP) in 1985. As a NRHP-listed property, it did not require evaluation in the Historical Resources Evaluation Report (HRER), and it is automatically listed in the California Register of Historical Resources (CRHR). The built environment resources on the other two parcels were evaluated in the Historic Resources Property

Report, as required, for NRHP eligibility but did not meet eligibility criteria for listing (JRP 2020b). The report concluded the proposed roadway improvements would not have any potential to materially impair any historical resource in the vicinity of the Project through demolition (JRP 2020).

The Historic Property Survey Report conducted by JRP further concluded no historic district has been identified along the project route, and there does not appear to be sufficient concentration, linkage, or continuity of historic buildings that are united historically or aesthetically along Old Arcata Road to constitute a potential district (JRP 2020). While the area includes multiple old buildings that date to a possible late nineteenth / early twentieth century period of significance, and the area's rural character generally remains, there are many mid to late twentieth century / early twenty-first century properties, as well as renovated and/or altered buildings, along the project route that diminish the potential for establishing a historic district. As described in the Historic Property Survey Report, formation of historic district requires the following:

- The historic district must be a unified entity of interrelated resources that can "convey a visual sense of the overall historic environment" or are "an arrangement of historically or functionally related properties."
- The historic district must meet one of the four criteria for significance and must retain historic integrity. National Register guidelines specifically address the issue of historic district integrity stating that "the majority of the components that make up the district's historic character must possess integrity even if they are individually undistinguished."
- The historic district is not eligible if its elements are so altered, and it contains so many modern intrusions, that it no longer conveys its potential period of significance (JRP 2020b).

The Historic Property Survey Report concluded that examination of documentary evidence to determine the histories of individual properties as well as the community as a whole, combined with field survey observation, did not reveal groupings of resources united historically or aesthetically that also retained historic integrity were present in the APE. The buildings in the APE were determined not to meet these criteria because of their disparate dates of construction, lack of a shared development history, lack of aesthetic or architectural unity, the loss of many historic-era properties, and presence of numerous modern intrusions. Thus, the Historic Property Survey Report concluded there is no existing or potential historic district in the APE (JRP 2020b).

Furthermore, the project will not affect the buildings, and none of these properties have features in their immediate surrounding or setting, such as landscape features, that are character defining and would be affected by construction of the roundabout. Thus, the project will not diminish the integrity of location, design, materials, workmanship, or association of the evaluated known and potential historical resources (JRP 2020).

The current configuration of the intersection at Old Arcata Road and Jacoby Creek Road dates to the mid-twentieth century and does not reflect the historic layout of the roadways that was present when all four of the buildings were constructed. There is no evidence that the configuration of this intersection contributed in any way to the history or significance of the four properties (JRP 2020). These roads have evolved through time, and the proposed roundabout is further evolution of the intersection. The roundabout would not be an oversized alteration that other structures, like a grade separation or expressway on and off ramps, would represent. This new configuration does not represent a change to Bayside, such that residents and visitors could not continue to comprehend the historic character of the nearby known and potential historical resources. Therefore, the adjacent historical resources would retain historic integrity, and the historical resource's features, spaces, and spatial relationships would also be retained. The proposed roundabout landscaping

would be included to help integrate the new structure into the character of Bayside, which in turn helps the project be generally compatible with the historical resources (JRP 2020). Plantings within the center of the roundabout would be consistent with other City roundabouts and public right-of-ways. All new plantings would be designed to maximize connectivity with existing landscaping and mature trees.

Given impacts to built historic resources would not occur, the establishment of an historic district is unlikely due to degraded integrity of existing resources and insufficient concentration, linkage, or continuity of historic buildings to constitute a potential district, further given that JRP (2020) report found that the potential for future establishment of a historic district would not be diminished or precluded as a result of the Project, the potential impact to built historical resources would be less than significant.

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

Archaeological resources are known to be present within the Project Area. Archaeological resources were evaluated under the Project's ASR and Extended Phase 1 Report prepared by WRA and Pacific Legacy (2020). The archaeological area of potential effect for the project was defined by the City in coordination with staff from Caltrans District 1 and THPOs from the Bear River Band of the Rohnerville Rancheria, the Blue Lake Rancheria, and the Wiyot Tribe. The APE incorporates the proposed area of direct impact (ADI) associated with the project as well as the full extents of archaeological sites that are known or believed to extend into the project ADI.

No substantial, intact prehistoric or historic period deposits associated with known or previously unrecorded archaeological sites were encountered during development of the ASR and the two Extended Phase 1 investigations.

In coordination with consulting tribes the City would develop an Environmentally Sensitive Area (ESA) Action Plan, a Phased Identification Plan, and a Post-Review Monitoring Discovery Plan to ensure protection measures, monitoring, and reporting requirements necessary to protect archaeological resources present or potentially present in the Project Area.

The ESA Action Plan would delineate the archaeological sites to be protected, document the specific protective measures required, and identify responsible parties and their appropriate tasks. The ESA Action Plan would also identify required archaeological monitoring necessary during project implementation, notification requirements, and responsible parties thereof.

The Phased Identification Plan would address the need, rationale, archaeological expectations based on sensitivity, methods and timing for pedestrian survey, and reporting. The plan would also address construction impacts procedures for an additional Extended Phase 1 or new Phase2 evaluation, if needed.

The Post-Review Monitoring and Discovery Plan would include protocols for working within the construction environment, such as monitoring schedules, lines of communication for discoveries, methods to evaluate finds and reporting and notifications. The Post-Review Monitoring and Discovery Plan would address procedures for discoveries during construction, chain of command and responsible parties, contact information for responsible parties, special procedures for human remains, laboratory analysis and curation of discovered archaeological resources, and required reporting in support of encountered archaeological resources.

Although unrecorded archeological resources were not encountered during investigations, there remains the potential to encounter such deposits during project ground disturbing activities,

particularly since much of the project ADI is subsumed by concrete, asphalt and development areas. Implementation of the ESA Action Plan, Phased Identification Plan, and Post-Review Monitoring and Discovery Plan would reduce the potential risk to archaeological resources. However, the potential impact to archaeological resources inadvertently discovered during construction could be significant. Mitigation Measure CR-1 shall be incorporated into the project to ensure potential impacts to archaeological resources, if encountered, would be reduced to the less than significant level.

Mitigation

Mitigation Measure CR-1 will be implemented by the City to develop an MOU with consulting tribes to address protections necessary for tribal cultural resources potentially affected by the project.

Mitigation Measure CR-1: Develop and Implement an MOU with Consulting Tribes

The City shall develop an MOU with consulting tribes to that will include:

- When and where tribal and or archaeological monitors will be needed
- Potential Preconstruction guided investigation needs that would occur prior to construction
- Inadvertent discovery protocols and plans

The MOU shall be developed prior to construction and implemented throughout the duration of project construction.

With the implementation of the plans described under Mitigation Measure CR-1, potential impacts to archaeological resources would be less than significant.

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

Inadvertent discovery of human remains has the potential to result in a significant impact to cultural resources. The MOU Plan included in Mitigation Measure CR-1 will specifically include detailed special procedures for discoveries of potential human remains, consistent with the City's standard protocol for inadvertent discovery of human remains.

As included in the City's standard protocol, if human remains are discovered during project construction, work within the discovery location plus nearby areas reasonably suspected to overlie human remains, will cease (Public Resources Code, Section 7050.5). The Humboldt County Coroner and designated tribal representatives will be contacted by the Project Archaeologist to determine if the cause of death must be investigated. If the Coroner determines that the remains are of Native American origin, it is necessary to comply with state laws regarding the disposition of Native American burials, which fall within the jurisdiction of the California Native American Heritage Commission (NAHC) (Public Resources Code, Section 5097). In this case, the Coroner will contact NAHC. The descendants or most likely descendants (MLD) of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or person responsible for excavation work with direction regarding appropriate means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

Given the inclusion of inadvertent discovery in the Mitigation Measure CR-1 MOU and implementation of the City's standard protocol for inadvertent discovery of human remains, any potential impact would be less than significant.

3.6 Energy

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

There are no developed industrial energy resources within the City, although many residences and businesses have installed solar panels in support of sustainable energy development. The City's energy needs are largely met from developed energy resources from outside the city limit, into Humboldt County and beyond. Although natural gas deposits exist in Humboldt County, 90% of natural gas is imported. There is no record of geothermal production in Humboldt County. The Project Area is not located on or near any substantial known energy source or energy system infrastructure.

Roughly half of the electricity serving Humboldt County is generated at the Pacific Gas and Electric Company (PG&E) Humboldt Bay Generation Station utilizing a 163-megawatt natural gas-fired power plant. Local biomass resources are used to provide a portion of the county's electricity needs. The biomass resources are primarily derived from lumber mill wood residue. It is projected that local renewable resources could provide the majority of Humboldt County's electricity needs and a substantial portion of heating and transportation energy demands (Humboldt County 2017). No existing energy infrastructure serves the Project Area.

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 Impact)

Construction of the Project would involve grading, excavation and use of heavy machinery as discussed under Section 3.3 (Air Quality). Construction would require the use of fuels, primarily gas, diesel, and motor oil. The precise amount of construction-related energy consumption that would occur is uncertain. However, construction would not require a large amount of fuel or energy usage because of the moderate number of construction vehicles and equipment, worker trips, and truck trips that would be required for a Project of this scale. Trips associated with the Project would consist up to 68 trips per day, and construction equipment would remain staged in the Project Area once mobilized. Use of these fuels would not be wasteful or unnecessary because their use is necessary to complete the Project.

Excessive idling and other inefficient site operations would be prohibited. Equipment idling times would be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes or less (as required by the California airborne toxics control measure (Title 13, Section 2485 of the CCR).

The Project would improve ease of use for non-motorized transportation along Old Arcata Road by

upgrading bike lanes and improving and extending the pedestrian walkway. These improvements would enhance opportunities for non-motorized commuting and transit by local residents and thereby reduce VMT and associated energy consumption.

Because of the short initial construction timeframe (6-8 months) and construction implementation that would not result in the use of large amounts of fuel and energy in a wasteful manner, impacts related to the inefficient use of construction-related energy impacts would be less than significant. Because the Project facilitates non-motorized transportation such was bicycling and walking, operationally-related energy impacts would also be less than significant.

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

State Plans

State of California Energy Action Plan

In 2003, the three key energy agencies in California— the California Energy Commission (CEC), the California Power Authority ("CPA"), and the California Public Utilities Commission (CPUC)— jointly adopted an Energy Action Plan ("EAP") that listed goals for California's energy future and set forth a commitment to achieve these goals through specific actions. In 2005, the CPUC and the CEC jointly prepared the EAP II to identify the further actions necessary to meet California's future energy needs. To the extent that efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, the EAP II supports the use of clean and efficient fossil-fired generation. The plan recognizes that concurrent improvements are required to the bulk electricity transmission grid and distribution facility infrastructure to support growing demand centers and the interconnection of new generation, both on the utility and customer side of the meter.

Senate Bill 1389

Senate Bill (SB) 1389, the *California Integrated Energy Policy*, was adopted in August 2002 and requires the CEC to prepare an Integrated Energy Policy Report (IEPR) for electricity, natural gas, and transportation fuels. The IEPR contains an analysis of the policies and actions that are necessary to ensure that the state has adequate energy resources—including a range of alternative energy resources—to meet its needs. The IEPR also includes recommendations to reduce energy demand and to improve the state's energy infrastructure.

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) required the CEC to prepare a state plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the State Alternative Fuels Plan in partnership with the California Air Resources Board and in consultation with other state, federal, and local agencies. The final State Alternative Fuels Plan, published in December 2007, would attempt to achieve an 80-percent reduction in greenhouse gas emissions associated with personal transportation, even as California's population increases.

Local Plans

City of Arcata

In 2006, the City developed a Community Greenhouse Gas Reduction Plan. The plan focuses on six action areas: energy efficiency, renewable energy, sustainable transportation, waste and

consumption reduction, carbon sequestration and other methods, and cross-cutting approaches. In addition to reducing greenhouse gas emissions it is expected that the implementation of this plan would offer many other community benefits. These include: energy cost savings with subsequent benefits to the local economy, cleaner air, less reliance on fossil fuels and imported energy sources, and a move toward a more sustainable energy economy. Implementation of this plan would also serve to fulfill numerous objectives that are stated in the Arcata General Plan: including Policy RC-8, Energy Resources Management (City of Arcata 2006).

The Community Greenhouse Gas Reduction Plan also includes applicable recommendations for sustainable transportation, including:

- Improve bicycle infrastructure,
- Improve pedestrian infrastructure (sidewalks, paths, and walkways), and
- Improve mass transit infrastructure.

Humboldt County

In cooperation with Redwood Coast Energy Authority, Humboldt County is currently developing a Climate Action Plan. The plan is not yet complete.

The proposed Project is consistent with State and local plans and includes elements that would promote non-motorized infrastructure, such as improved bicycle lanes and upgraded and extended pedestrian facilities. In addition, planned improvements to Old Arcata Road would better enable future integration with the Humboldt Transit Authority for a mass transit bus route along the Project corridor. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. No impact would result.

3.7 Geology and Soils

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?				✓
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?			✓	

The Project is located on generally flat and gently sloping bottomlands between Humboldt Bay and the forested hillslopes and neighborhoods east of the Project corridor. Soils along the Project corridor are likely to have been previously disturbed and compacted due to prior activities to construct and maintain Old Arcata Road, adjacent residences, businesses, and schools, and associated utility infrastructure. The Project is located on existing roadway that includes existing vehicular use. Project construction predominantly includes shallow excavation (less than 2 feet). In specific areas, limited excavation up to a depth of approximately eight feet would occur for

streetlight footings or foundations. As noted in the project description, the City will adhere to recommendations from design-level geotechnical and pavement investigations for the Project as part of the Project design process.

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)

The Project would have no impact with regard to the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake fault Zoning Map. The nearest fault, the Fickle Hill Fault, is approximately 0.5 miles away from the northern terminus of the Project corridor. Project activities, which include shallow excavation and repaving, would not rupture the Fickle Hill fault or any other known fault. No impact would occur.

a, ii) Strong seismic ground shaking? (No Impact)

The Project is situated within a seismically active area close to several seismic sources capable of generating moderate to strong ground motions. Given the proximity of the Fickle Hill fault and other significant active faults (the Little Salmon fault to the southwest, the Mad River fault zone to the north, and the Cascadia subduction zone offshore to the west), as well as other active faults within and offshore of northern California, the Project site could experience strong ground shaking during the economic life span of the proposed development.

The Fickle Hill fault is located less than 0.5 miles northeast of the Project, and is the closest recognized active fault (CDMG 1983). The Project site is not located within an Alquist-Priolo earthquake fault zone, in which the State requires special studies for structures for human occupancy. Due to the distance from the Project site to the nearest recognized active fault, and based on the information available, the potential for ground surface fault rupture to occur at the Project site is considered low. The Project is located on an existing roadway with existing daily use. Thus, Project implementation would not increase risk of strong seismic ground shaking or exposure to strong seismic ground shaking above existing conditions.

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

Liquefaction is a phenomenon involving loss of soil strength, and resulting in fluid mobility through the soil. Liquefaction typically occurs when loose, uniformly-sized, saturated sands or silts are subjected to repeated shaking in areas where the groundwater is less than 50 feet below ground surface. In addition to the necessary soil and groundwater conditions, the ground acceleration must be high enough, and the duration of the shaking must be sufficient, for liquefaction to occur. Given strong ground shaking, these conditions appear to have been met at the Project site.

The potential for liquefaction-related settlement exists at the Project site. Earthquake-related liquefaction could result in sand boils and minor differential settlement on the site; however, lateral spreading due to liquefaction is not anticipated to affect the Project site given that there are no free faces of significance nearby. Project implementation would not increase risk of liquefaction or exposure to liquefaction above existing conditions and no impact would occur.

The Project corridor is generally flat and gently sloping, located in the Humboldt Bay bottomlands. Steep slopes and hillslopes are not present within the Project corridor. Thus, landslides within or near the Project corridor are unlikely to occur, and the potential for landslide occurrence is not increased by the Project. No impact is anticipated.

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

Due to the flat topography, the lack of significant cut or fill slopes and the requirements of the City and State with regard to storm water management and erosion control, soil erosion and loss of topsoil are considered to be less than significant.

Construction activities, including cut, fill, removal of vegetation, and operation of heavy machinery would disturb soil and, therefore, have the potential to cause erosion. These activities would be performed in compliance with the BMPs prescribed in the Arcata Municipal Code, NCRWQCB regulations and the California Building Code (CBC). BMPs may include: silt fences, straw wattles, soil stabilization controls, site watering for controlling dust, and sediment detention basins. Environmental Protection Action 1 include a SWPPP which would be required prior to any grading or construction activities in excess of one acre (see Section 1.7.1). Therefore, no substantial soil erosion or loss of topsoil would result from the Project, and the potential 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)

Project activities include replacement of sanitary sewage infrastructure, including laterals and clean outs. In addition to municipal sanitary sewer facilities, private septic systems are also in use along the Project corridor. The Project would continue to be connected to the City of Arcata's wastewater treatment system and would not require the use of additional septic tanks or an alternative wastewater disposal system. There would be no impact.

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 PRC Section 5097.5, unauthorized disturbance or removal of a fossil locality or remains on public land is a misdemeanor. State law also requires reasonable mitigation of adverse environmental impacts that result from development of public land and affect paleontological resources (PRC Section 30244).

According to the Humboldt County General Plan (2017), the geology of the Mad-Redwood Basin is complex and variable. The basin includes the Mad River, Redwood Creek, Eureka Plain, and Trinidad planning watersheds which all differ in their bedrock composition. Mad River, Redwood Creek, and Trinidad are composed primarily of Franciscan rock types, while Eureka Plain is mostly younger sedimentary rock.

The Project includes only shallow excavation limited to a maximum depth of up to eight feet in limited, discrete locations that have largely been previously disturbed by prior road development and utility installation. It is unlikely that Project construction would impact potentially significant paleontological resources; however, there is the possibility of discovering unique paleontological resources or unique geologic features during construction. Mitigation Measure GEO-1 is included in event paleontological resources are inadvertently discovered within the Project Area during construction, reducing the potential impact to less than significant.

Mitigation

Mitigation Measure GEO-1: Inadvertent Discovery of Paleontological Resources

If potential or paleontological resources are encountered during Project subsurface construction activities or geotechnical testing, all work within 50 feet of the find shall be stopped, and a qualified archaeologist funded by the City and approved by the City shall be contacted to evaluate the find, determine its significance, and identify any required mitigation. The applicant shall be responsible for implementing the mitigation prior to construction activities being re-started at the discovery site.

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.

3.8 Greenhouse Gas Emissions

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

The greenhouse gas analysis below discusses greenhouse gas emissions and consistency with the State of California's *2017 Climate Change Scoping Plan*. If the Project meets the criteria laid out in applicable greenhouse gas emissions plans, policies, and regulations, then its impact for that category may be considered less than significant.

a, b) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less than Significant)

Climate change refers to change in the Earth's weather patterns including the rise in the Earth's temperature due to an increase in heat-trapping greenhouse gases (GHG) in the atmosphere. Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of GHGs that contribute to global warming or global climate change have a broader, global impact. Global climate change is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the Earth's atmosphere. The principal GHGs contributing to global warming are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and fluorinated compounds. These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space. GHG emissions can be reduced to some degree by improved coordination of land use and transportation planning at the city, county and subregional level, and other measures to reduce automobile use. Energy conservation measures also can contribute to reductions in GHG emissions.

State Guidance

The leading guidance on greenhouse gas emissions within the State of California is the Global Warming Solutions Act of 2006 (Assembly Bill 32), which committed the State of California to reduce GHG emissions to 1990 levels by 2020. The statute requires the California Air Resources Board (CARB) to track emissions through mandatory reporting, determine the 1990 emission levels, set annual emissions limits that would result in meeting the 2020 target, and design and implement regulations and other feasible and cost effective measures to ensure that statewide GHG emissions would reach its target.

In December 2008, pursuant to Assembly Bill 32 (AB 32), the CARB adopted the Climate Change Scoping Plan (*Scoping Plan*), which outlined measures to attain the 2020 GHG emissions limit. The Scoping Plan estimated that implementation of identified measures would result in a reduction of emission from various sectors including transportation, energy, forestry, and high global warming

potential gas sectors. The CARB has updated the Scoping Plan twice, approving the First Update to the Climate Change Scoping Plan (*Updated Scoping Plan*) in May 2014, and the 2017 Scoping Plan in December 2017. The 2017 Scoping Plan identifies progress made to meet the near-term (2020) objectives of AB 32 and defines California's climate change priorities and activities for the next several years (CARB 2017). The *2017 Climate Change Scoping Plan* provides strategies for meeting the mid-term 2030 greenhouse gas reduction target of 40 percent below 1990 levels by year 2030 set by SB 32. The plan also identifies how the State can substantially advance toward the 2050 greenhouse gas reduction target of Executive Order S-3-05, which consists of reducing greenhouse gas emissions to 80 percent below 1990 levels.

Regional Guidance

The NCUAQMD does not have rules, regulations, or thresholds of significance for non-stationary GHG emissions. In 2011, the NCUAQMD adopted Rule 111 - Federal Permitting Requirements for Sources of Greenhouse Gases to establish a threshold above which New Source Review and federal Title V permitting applies and to establish federally enforceable limits on potential to emit GHGs for stationary sources. These are considered requirements for stationary sources, and should not be used as a threshold of significance for non-stationary source Projects. For reference, Rule 111 Section D(1)(a) and D(1)(b) have applicability thresholds of 75,000 MTCO2e per year and 100,000 MTCO2e per year.

Humboldt County

In cooperation with Redwood Coast Energy Authority, Humboldt County is currently developing a Regional Climate Action Plan, which would address greenhouse gas emissions. The City of Arcata is participating in that planning process. The plan is not yet complete.

City of Arcata

In 2006, the City developed a community-wide Greenhouse Gas Inventory as well as a Community Greenhouse Gas Reduction Plan; this plan focused on six action areas including energy efficiency, renewable energy, sustainable transportation, waste and consumption reduction, carbon sequestration and other methods, and cross-cutting approaches. Arcata's greenhouse gas inventory has since been updated in the 2010 Greenhouse Gas Emissions Inventory of Government Operations and the 2015 Community Greenhouse Gas Emissions Inventory.

Applicable transportation measures from the Greenhouse Gas Reduction Plan include:

- Improve Bicycle Infrastructure: create more bike lanes on existing roads and make bridges and intersections more bicycle-friendly. Bicycle parking should be easily accessible, plentiful, and protected from rain where possible.
- Improve Pedestrian Infrastructure (sidewalks, paths, and walkways): sidewalks need to be wide enough so people can walk comfortably side by side and be able to pass others. Walkways need to be well marked, accessible and continuous, so that walkers can safely share the roadways with cyclists and autos.

Project Impacts

Construction

Project construction activities would result in a temporary increase in GHG emissions, including exhaust emissions from on-road trucks, worker commute vehicles, and off-road heavy-duty machinery. Construction would require clearing, earthmoving, and delivery equipment, as used for similar projects, and which have been accounted for in the State's emission inventory and reduction

strategy for both on and off-road vehicles. Construction emissions were estimated using CalEEMod version 2016.3.2, and are estimated to be approximately 88 $MTCO_2e$ from all construction activities over the construction period. The Project's construction emissions equal 3.9 MTCO2e per year when annualized over the assumed 30-year lifespan of the Project.

In addition, although Project construction may benefit (have a reduced generation of GHG) from implementation of some of the State-level regulations and policies, the Project would not impede the State in meeting the AB 32 greenhouse gas reduction goals. Therefore, impacts from the Project's construction emissions would be less than significant.

Operation

Project operation would not result in a new source of GHG emissions as it would not increase the vehicle capacity, speed, or vehicle miles traveled of the Project roadway.

The Project would improve bicycle and pedestrian infrastructure and therefore is consistent with and supports the City's Community Greenhouse Gas Reduction Plan. These Project components also support the *2017 Climate Change Scoping Plan's* goals to reduce emissions from the transportation sector. The recommended next steps in the *2017 Climate Change Scoping Plan* are broad policy and regulatory initiatives that would be implemented at the State level and do not relate to the construction and operation of smaller individual infrastructure projects such as the proposed Project.

The Project would not conflict with the City of Arcata's *Community Greenhouse Gas Reduction Plan*, the *2017 Climate Change Scoping Plan*, nor the goals of AB 32. In addition, the Project facilities improved ease of use for non-motorized transit along Old Arcata Road, which would reduce VMT and associated emissions. Therefore, the Project would result in a less than significant impact.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 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?			✓	

This section evaluates the potential impacts related to hazards and hazardous materials during construction and operation of the Project.

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 for construction equipment and vehicles, and paints, asphalt materials, 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.

Caltrans and the California Highway Patrol (CHP) regulate the transportation of hazardous materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. The California Division of Occupational Safety and Health (Cal-OSHA) also enforces hazard communication program regulations which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees.

Project construction would be required to implement storm water best management practices during construction in accordance with the State Water Resources Control Board General Construction Storm Water Permit. Best management practices addressing materials management would be required, including proper material delivery and storage, spill prevention and control, and management of concrete and other wastes.

Because the City and its contractors would be required to comply with existing and future hazardous materials laws and regulations and applicable best management practices addressing the transport, storage, use, and disposal of hazardous materials, the potential to create a significant hazard to the public or the environment during construction of the Project would be less than significant.

Following construction, operation of the Project would not result in the need for new hazardous materials that would need to be transported, used, or disposed. No operational impact would occur.

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)

The Project would utilize heavy machinery to perform some tasks including grading, paving, and transportation of materials. There is always the possibility when equipment is operating that an accident could occur and fuel could be released onto the soil. Equipment on site during construction would be required to have emergency spill cleanup kits immediately accessible in the case of any fuel or oil spills. The potential impact is less than significant.

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

Jacoby Creek Elementary School is located within the Project corridor. Construction activities are assumed to include the use of hazardous materials such as fuels, lubricants, degreasers, paints, and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials (see Impact discussion in Section 3.9 (a) and (b) above). Although construction activities could result in the inadvertent release of small quantities of hazardous construction chemicals, a spill or release at a construction area is not expected to endanger individuals at nearby schools given the nature of the materials and the small quantities that would be used. Therefore, because the City and its contractors would be required to comply with existing and future hazardous materials laws and regulations covering the transport, use, and disposal of hazardous materials, and because of the nature and quantity of the hazardous materials to be potentially used by the Project, the impact related to the use of hazardous materials

during construction adjacent to the school would be less than significant.

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

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List." A search of the Cortese List search (CalEPA 2019) was completed to determine if any known hazardous waste sites have been recorded on or adjacent to the Project alignment. The Project is not located on a hazardous materials site compiled pursuant to Government Code Section 65962.5.

An Initial Site Assessment (ISA) was conducted to evaluate areas of potentially impacted soil and/or groundwater along the Project alignment that may require special handling and disposal during construction or could pose a health exposure risk to construction workers (GHD 2018). As part of the Initial Site Assessment, databases for the State Water Resources Control Board Geotracker for leaking underground storage tanks (SWRCB 2019) and State Water Resources Control Board list contains many Cease and Desist Orders and Cleanup and Abatement Orders that do NOT concern the discharge of wastes that are hazardous materials (SWRCB 2019b) were also queried. This ISA identified five properties where potentially impacted soil and/or groundwater may be encountered, detailed below (GHD 2018).

Erickson's Garage

The former Erickson's Garage (Erickson's Garage) is located at 800 Bayside Road, Arcata, California and is further identified as Humboldt County Division of Environmental Health (HCDEH) Local Oversight Program (LOP) Case Number 12288. This property is located northeast of the Project alignment on the southeast side of Buttermilk Lane.

Based on information contained in the SWRCB Geotracker database and the HCDEH files, soil quality was impacted by a release of petroleum hydrocarbons from an undetermined source at the property. Constituents of concern (COCs) for this site include; petroleum hydrocarbons, lead and leaking UST (LUST) metals. HCDEH correspondence dated May 9, 1999 states that the case is closed and no remedial action is required.

The Erickson's Garage site is located northeast of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend beyond the property boundaries and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is unlikely that impacts from this property would affect soil and groundwater quality in the vicinity of the Project alignment.

Because the site is located outside of the Project Area and is not within 15 feet of the Project, potentially contaminated soils would not be disturbed and the impact would be less than significant.

Steve Morris Logging & Contracting

The Steve Morris Logging & Contracting property (Steve Morris Logging) is located at 963 Bayside Road, Arcata, California and is further identified in SWRCB Geotracker database file review has having a 1,640 gallon Above ground storage tank (AST) on the property. This property is located west of the Project alignment on the west side of Old Arcata Road.

Based on information contained in the SWRCB Geotracker database, soil quality and groundwater was not impacted by petroleum hydrocarbons though a risk exists as the property contains an

active AST. The Steve Morris Logging site is located west of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend the property boundary and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is unlikely that impacts from this property would affect soil and groundwater quality in the vicinity of the Project alignment. The potential impact would be less than significant.

Cal-Kirk Landscaping & Erosion Control

The Cal-Kirk Landscaping & Erosion Control property (Cal-Kirk Landscaping) is located at 1127 Old Arcata Road Arcata, California and is further identified Humboldt County Division of Environmental Health (HCDEH) Local Oversight Program (LOP) Case Number: 12082. The North Coast Regional Water Quality Control Board (RWQCB) Case Number: 1THU082. Historic use details previous UST's reported to contain diesel and leaded motor vehicle gasoline. This property is located west of the Project alignment on the west side of Old Arcata Road.

Based on information contained in the SWRCB Geotracker database and the HCDEH files, soil quality was not impacted by a release of petroleum hydrocarbons from the property. As noted in HCDEH files, two UST's were removed from the property in 1990 and the site officially closed. Constituents of concern (COCs) for this site include; petroleum hydrocarbons and leaking hazardous waste previously stored onsite.

The Cal-Kirk Landscaping site is located west of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend beyond the property boundaries and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is unlikely that impacts from this property would affect soil and groundwater quality in the vicinity of the Project alignment. The impact would be less than significant.

Smith, Norma/La Donna's Rest Home

The Smith, Norma/La Donna's Rest Home (Norma/La Donna's Rest Home) is located at 1972 Old Arcata Road in Arcata, California. SWRCB further identified hazardous materials previously stored onsite. During the ISA, the property was identified as containing a single 1,000 gallon UST, classified as a farm motor vehicle fuel tank, containing diesel fuel. This property is located south of the Project alignment on the west side of Old Arcata Road.

Based on information contained in the SWRCB Geotracker database and the HCDEH files, soil quality was not impacted by a release of petroleum hydrocarbons. UST constituents of concern (COCs) for this property include; petroleum hydrocarbons and leaking UST (LUST) metals.

The Norma/La Donna's Rest Home property is located west of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend beyond the property boundaries and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is unlikely that impacts from this property would affect soil and groundwater quality in the vicinity of the Project alignment. As Project construction would likely not impact the Smith, Norma/La Donna's Rest Home property, collection of preconstruction borings are not recommended. The impact would be less than significant.

Roger's Garage & KD Investments

The Former Roger's Garage and KD Investments property (Roger's Garage) is located at 1622 Old Arcata Road, Arcata, California and is further identified as Humboldt County Division of Environmental Health (HCDEH) Local Oversight Program (LOP) Case Number: 12735. The North Coast Regional Water Quality Control Board (RWQCB) Case Number: 1NHU804. This property is located east of the Project alignment on the east side of Old Arcata Road, directly across from Jacoby Creek Elementary School.

Based on information contained in the SWRCB Geotracker database and the HCDEH files, soil quality was impacted by a release of petroleum hydrocarbons, and heavy metals due to site historical use at the property. Constituents of concern (COCs) for this property include; petroleum hydrocarbons, copper, lead, zinc, cadmium metals. GeoTracker cleanup status, notes case is open and assessment and interim remedial action ongoing as of June 22, 2017.

The Roger's Garage site is located east of, and not included within, the Project alignment. Based on the information available on the SWRCB Geotracker database and contained within the HCDEH file, soil impacts do not extend beyond the property boundaries and groundwater flow direction is to the west, towards Humboldt Bay and downgradient of the Project alignment. It is anticipated that impacts from this property may affect soil or groundwater quality in the vicinity of the Project alignment. As the Project is anticipated to impact soil or groundwater within 15 feet of the Roger's Garage property, pre-construction borings would recommended be conducted. With the incorporation of Mitigation Measure HAZ-1, the potential impact would be less than significant.

Old Arcata Road Corridor

The Project alignment is located along Old Arcata Road which currently and historically has been used for vehicular traffic since its development in the late 1930s/early 1940s. Due to historical use of Old Arcata Road as a highway when leaded gas was present, aerially deposited lead (ADL) may have impacted soils in the immediate vicinity of the roadway. As Old Arcata Road defines the Project boundary, there is the potential for ADL. Pre-characterization of soil and groundwater for potential aerially deposited lead (ADL) impacts is recommended in the ISA prior to the start of construction activities (GHD2018). With the incorporation of Mitigation Measure HAZ-2, the potential impact would be less than significant.

Mitigation

Mitigation Measure HAZ-1: Evaluate and Manage Potential Contamination from "Roger's Garage"

Historical records of previous borings would be reviewed (if available) to mitigate duplicate boring efforts. If existing data is insufficient to evaluate potential contamination of soils to be excavated with the Project Area, additional pre-construction borings would occur. If sampled soil is found to be impacted by ADL, petroleum hydrocarbons, or other regulated contaminants, a Construction Soil Groundwater Monitoring Plan (SGMP) would be prepared prior to any construction activities. During construction, the SGMP would be implemented.

Mitigation Measure HAZ-2: Evaluate and Managed Aerially Deposited Lead

In areas of ground disturbance, pre-construction soil borings shall characterize lead concentrations in soil and groundwater in anticipation of construction activities. Once the areas of ground disturbance and potential dewatering are confirmed, a Preliminary Site

Investigation (PSI) workplan shall identify location and number of borings necessary for pre-characterization and depth for sample collection. Historic soil boring information (if available) shall be reviewed to further define boring locations and mitigate duplicative borings.

Laboratory analytical results of soil samples collected from the borings shall be utilized to ascertain whether health and safety concerns are present for construction workers and determine the potential for ADL impacted groundwater, and soil and/or groundwater handling and disposal options. Proposed soil borings and/or grab groundwater sample locations shall be determined following identification of the areas and depths of soil excavation and dewatering activities. If pre-construction TTLC soil characterization sampling indicates that concentrations of lead are elevated above 1,000 ppm, or if STLC analytical results are greater than 5 mg/l, then such data may indicate potential ADL impacts to groundwater.

If construction activities include dewatering, and if laboratory analysis of pre-construction soil borings indicate elevated total and STLC concentrations of 1,000 ppm and 5 mg/L, respectively, then pre-construction groundwater characterization shall occur. If lead impacted soil or groundwater is identified during pre-construction characterization, then a SGMP shall be developed to identify protocols that should be utilized to proactively manage potentially impacted soil and groundwater within the Project alignment and reduce exposure to site workers.

If pre-construction characterization indicates ADL impacts above STLC levels to soil and/or groundwater, site workers involved in excavation activities be trained in accordance with the Hazardous Waste Operations and Emergency Response (HAZWOPER) certification (Occupational Safety and Health Administration [OSHA] 1910.120).

With the incorporation of Mitigation Measures HAZ-1 and HAZ-2, potential impacts from existing hazardous sites located adjacent to the Project corridor and ADL would be less then significant.

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

The Project is no located within an airport land use plan. No impact would occur.

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

The City does not have an independent emergency response plan. The Humboldt County Emergency Operations Plan (Humboldt County 2015) does not designate specific evacuation routes or emergency shelter locations, or include policies or procedures with which the Project would conflict. Therefore, the Project would not impair implementation of or physically interfere with the 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)

The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These Fire Hazard Severity Zones (FHSZ) influence how people construct buildings and protect property to reduce risk associated with wildland fires. The Project site is primarily located in a local

responsibility area (LRA) meaning an area where local governments have financial responsibility for wildland fire protection (Humboldt County 2019). The Project site is in an area that has low potential for wildland fire. A very small portion of the Project corridor along Jacoby Creek Road is located in a state responsibility area (SRA). The Project corridor and surrounding vicinity is located in a moderate hazard severity zone, which is the lowest risk of all mapped categories (Humboldt County 2019). It is possible fire ignition could occur during construction (e.g. related to heavy machinery usage). The Project would not otherwise increase exposure to wildlife fire above existing conditions. The impact would be less than significant.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		✓		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?				✓
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial erosion or siltation on- or off-site?				✓
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			✓	
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?				✓

This section evaluates the potential impacts related to hydrology and water quality resulting from construction and operation of the Project. Beith Creek is located approximately 50 feet north of the Project. Beith Creek flows under Old Arcata Road through a culvert. With the implementation of standard erosion control BMPS, Beith Creek would remain unimpacted by construction nearest the northern end of the Project corridor.

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

The Project is required to obtain and comply with necessary permits requirements, acting to prevent, or essentially reduce the potential for the Project and operations to violate any water quality standards or waste discharge requirements.

The greatest potential Project impacts to water quality would result from sediment mobilization during construction and operations. Construction and operation activities such as site clearing, grading, excavation, and material stockpiling could leave soils exposed to rain or surface water runoff that may carry soil contaminants (e.g., nutrients or other pollutants) into waterways adjacent to the site, degrade water quality, and potentially violate water quality standards for specific chemicals, dissolved oxygen, suspended sediment, or nutrients. This impact would be potentially significant.

SWRCB Order No. 2009-0009 applies to public and private construction projects that include one or more acres of soil disturbance. Because the proposed Project is anticipated to disturb over one (1) acre of land, compliance with Order No. 2009-0009 would be required. Therefore, if construction and operation activities associated with the Project are not properly managed, applicable water quality standards and waste discharge requirements could be violated.

As described in Section 1.7.1(Environmental Protection Action 1), the Project and operations would obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. In compliance with the NPDES requirements, a Notice of Intent (NOI) would be prepared and submitted to the North Coast Regional Water Quality Control Board (NCRWQCB) prior to undertaking construction, 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 sampling and monitoring program would be included in the Construction SWPPP that meets the requirements of the NCRWQCB to ensure the BMPs are effective. A Qualified SWPPP Practitioner would oversee implementation of the Plan during all elements of Project implementation, including visual inspections, sampling and analysis, and ensuring overall compliance.

Additionally, water sourced from dewatering activities would be pumped into Baker tanks (or similar), dewatering bags, or settling basins and used for dust control purposes, consistent with Mitigation Measure AIR-1. Water sourced from dewatering would not be discharged to storm drains, sewer systems, or any drainage ditches to cause potential polluted runoff.

The potential impact to water quality standards would be less than significant with the incorporation of Mitigation Measure HWQ-1.

Mitigation

Mitigation Measure HWQ-1: Water Quality Control Measures During Excavation

In instances where excavation occurs within the vicinity of stream channels, flowing ditches, or wetted waters of the U.S. or State, erosion and sediment control measures shall be implemented. These measures shall include installation and maintenance of silt-fence along channel banks or wetted waters as specified in Project designs, and development of erosion control plans to prevent inadvertent sediment delivery.

Implementation of Mitigation Measure HWQ-1 would mitigate potential impacts on water quality standards and waste discharge requirements to a less-than-significant level by appropriately manage construction dewatering and implementing erosion control measures nears streams and other wetted waters of the U.S. or State.

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 would not decrease groundwater supplies or interfere with groundwater management. During construction, isolated and short-duration groundwater dewatering may occur as needed. Dewatering would be small in scale and limited to shallow groundwater only. Storm water swales are included in Project designs and would help bio-remediate roadway runoff and serve as a source of infiltration and local groundwater recharge. There would be no impact.

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? (No Impact)

The drainage pattern of the Project Area is limited to unpaved roadside ditches and underground storm drain infrastructure. Roadway and utilities improvements would not result in a realignment of the existing drainage pattern of the site, and the site does not include a stream or watercourse. Some storm drains and ditches with the Project Area ultimately drain to adjacent agricultural fields on private properties and would continue to do so after construction is complete. There would be no impact.

c, ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (Less Than Significant Impact)

The Project would be designed to meet NCRQWB storm water requirements to address any changes in the area of impervious surface. The Project would not be expected to cause on- or off-site flooding given that post-construction runoff would be detained on site and limited to pre-construction runoff rates, and that proper installation and long-term maintenance of the storm water controls would be conditionally required. The impact would be less than significant.

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

Changes in impervious surface are small in scale and include an extension of the pedestrian pathway, a new sidewalk along Hyland Street, and the new roundabout at the Jacoby Creek Road intersection. Given these Project features are scattered along the Project corridor and not concentrated in a single location, post-Project stormwater runoff is not expected to be significantly different than pre-Project stormwater runoff. The capacity of existing drainage facilities would be analyzed during Project design development. Stormwater system upgrades would be integrated into the overall Project design, as needed. In addition, the Project's SWPPP and NCRWQB CWA

Section 401 permit would both include provisions for managing stormwater runoff and ensuring any changes in impervious surfaces are addressed through bioswales or similar stormwater runoff treatment areas. No additional sources of pollution would be introduced through Project actions. The impact would be less than significant.

c, iv) Impede or redirect flood flows? (No Impact)

Under existing conditions, the roadway can become shallowly inundated during large rain events when roadside ditches exceed capacity and water floods Old Arcata Road. The Project corridor does not intersect a stream, canal, or other flood control waterway. The Project would not impede or redirect any flood flows. There would be no impact.

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

The Project site is not located near a larger isolated body of water that may be affected by a seiche. The Project is also located outside of the FEMA 100-year flood zone. Extending from the northern terminus of the project south to 1210 Old Arcata Road, the Project is located in the very eastern edge of the Tsunami Evacuation Area. The balance of the Project is located outside the Tsunami Evacuation Area. If a tsunami occurred during construction, pollutants from heavy machinery (e.g. diesel) could be released into the environment. In the event of tsunami that was severe enough to extend to the eastern edge of the Tsunami Evacuation Area, the cumulative environmental and human impact would be catastrophic and the impact directly attributable to the proposed project would be insubstantial by comparison. The impact would be less than significant.

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 Basin Plan, which establishes thresholds for key water resource protection objectives for both surface waters and groundwater. The Project shall obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, which would include a SWPPP as described in Environmental Protection Action 1 (see Section 1.7.1). The Project shall also obtain a NCRWCB CWA Section 401 Water Quality Certification. These regulatory requirements and associated requisite monitoring would ensure a conflict with the Basin Plan does not occur. There would be no impact.

3.11 Land Use and Planning

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

This section evaluates the potential impacts related to land use, as it applies to construction and operation of the Project.

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

The Project would not physically divide a community. The Project would improve user experience in crossing the existing Old Arcata Road by upgrading pedestrian cross walks, installing new signage, upgrading and installing speed humps to slow vehicle speeds, restripe bicycle lanes, and improve community connectivity through upgraded and extended multi-use pathways and sidewalks. The Project would improve non-motorized user experiences while maintaining the character of the existing community.

Under existing conditions, there are no cross walks or other safety features at the intersection of Old Arcata Road and Jacoby Creek Road. There is a single stop sign at Jacoby Creek Road, and there is no stop sign along Old Arcata Road, allowing through traffic. Cross walks and signage would be integrated into the proposed roundabout, improving safety for motorists, bicycles, and pedestrians. The Project would improve physical linkages and ease of use across Old Arcata Road. There would be no impact.

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 is consistent with the City of Arcata and Humboldt County zoning and land use planning, which indicates the Project corridor is an existing, planned roadway. Post-Project operation of the roadway would be similar to existing conditions (e.g. no increase in speed or roadway designation). The footprint of the roadway would expand only slightly to accommodate a new roundabout at the Old Arcata Road/Jacoby Creek intersection, which is consistent with City and County transportation policies (see Section 3.17) and would not alter land use. There would be no impact.

3.12 Mineral Resources

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

This section evaluates the potential impacts related to mineral resources associated with the Project; there are no 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)

Construction of the proposed Project would not result in the loss of mineral resources because there are no mineral resources found within the Project Area. The Project does not require a substantial amount of any mineral resource for construction, although some mineral resources (primarily aggregate and rock) would be needed for construction. Therefore, no impact would occur.

3.13 Noise

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
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 conditions in the Project Area generate noise associated with traffic on Old Arcata Road, Jacoby Creek Road, and adjacent City streets. Noise sources include stopping, turning, accelerating, and decelerating vehicles. Background noise for a busy urban street is estimated at 90 decibels (City of Arcata 2008). However, the City of Arcata projected noise contours for the year 2020 along the Project corridor predict a noise level of 65 decibels (City of Arcata 2008). Thus existing noise in the Project Area likely ranges between approximately 65 and 90 decibels, depending on the time of day and types of vehicles utilizing the roadway.

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 proposed Project would temporarily increase noise in the immediate vicinity of the Project site. The temporary noise increases would result from use of construction equipment for the Project, as well as from increased traffic as construction workers commute to and from the Project site. To prevent noise disturbance to the community, City of Arcata General Plan Noise Element Policy N-5d limits construction activity to the hours between 8 a.m. and 7 p.m. Monday through Friday, And between 9 a.m. and 7 p.m. on Saturdays. No heavy equipment related construction activities shall be allowed on Sundays or Holidays.

Sensitive noise receptors, including housing and schools, are adjacent to the Project corridor. The Project would generate temporary noise during construction. Noise levels would be consistent with

the reference noise levels in Table 3.13-1 below.

Table 3.13-1: Construction Equipment Reference Noise Levels as Measured at 50'

Equipment	Noise Level (dB[1])	Equipment	Noise Level (dB)
Drill rig truck	84	Jackhammer	85
Horizontal Boring Hydraulic Jack	80	Large Generator	82
Front end loader or Backhoe	80	Paver or Roller	85
Excavator	85	Dump truck	84

Source: Federal Highway Administration, 2006.

Sound from a point source is known to attenuate at a rate of -6 dB for each doubling of distance. For example, a noise level of 84 dB Leq as measured at 50 feet from the noise source would attenuate to 78 dB Leq at 100 feet from the source and to 72 dB Leq at 200 feet from the source to the receptor. Based on the reference noise levels in Table XII-1, the noise levels generated by construction equipment at the Project site may reach a maximum of approximately 85 dB Leq at 50 feet during site excavation and construction.

For measuring noise levels and setting noise standards, the City uses the Community Noise Equivalent Level (CNEL) and the Day/Night Noise Level (Ldn). The Ldn measure averages a weighted noise over a 24-hour period, and adds 5 dBA (A-weighed decibel) to noise levels between 7:00 p.m. and 10:00 p.m. The CNEL uses the same methodology, plus adds 10 dBA to noise levels between 10:00 p.m. and 7:00 a.m.

Adherence to City of Arcata General Plan Policy N-5d which limits construction activity hours, and Policy N-5e which requires that all construction equipment be maintained in good working order and fitted with factory approved mufflers would limit construction noise intensity and duration such that construction noise at sensitive receptors would be reduced. The impact would be less than significant.

Operational noise associated with the proposed Project would consist of standard roadway maintenance, which occurs periodically on Old Arcata Road and other City roadways. The incremental increase in noise in the Project Area would not expose persons to noise levels in excess of applicable standards and would not represent a substantial increase in noise. The impact would be less than significant.

Noise Ordinance Compatibility

The City of Arcata's Noise Element does not include restrictions or guidelines for short-duration roadway improvement Projects. Short-term noise performance standards during daytime hours for Humboldt County range from a maximum of 65 dB – 85 dB, depending on the land use. However, exceptions include the use of heavy machinery and tools used during construction of permitted structures when conforming to the terms of the approved permit (Humboldt County 2017d). The Project would be fully permitted and would comply with terms of approved permits, including those that specifically address noise limitations. The Project would not conflict with Humboldt County's Noise Element.

[1] "dB" is a weighted decibel measurement for assessing hearing risk and, therefore, is used by most regulatory compliance.

Noise and Land Use Compatibility

Construction

The Project is located along an existing primary transportation corridor, connecting the City of Arcata to the communities of Sunny Brae, Bayside, Indianola, Eureka, and Highway 101. As an existing public roadway, the land use of the Project corridor is consistent with proposed construction activities. As with any primarily public roadway, short-duration road construction and general road maintenance activities, as well as their accompanying levels of noise, are common and routine activities. Increases in noise due to construction would occur during daytime hours only. The impact would be less than significant.

Operation

After construction, operational noise generated by the Project would decrease due to a quieter, smoother roadway surface and traffic calming measures such as speed humps and improve signage. The proposed roundabout at the Jacoby Creek Road intersection would also decrease operational noise by reducing the amount of acceleration and braking associated with stopping, turning, and reaccelerating. The potential impact would be less than significant.

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

Earth moving and earth compacting activities using heavy machinery would create groundborne vibrations and noise that may be noticeable on a temporary and intermittent basis, at nearby residences, school, commercial and retail businesses. There would be no pile driving associated with the Project. Noticeable groundborne vibrations and noise be limited to normal daytime hours. The proposed Project would comply with all applicable City policies to abate construction-related noise impacts. General Plan Policy N-5d requires limiting construction activity to specified daytime hours, consistent with planned Project operations. Policy N-5e requires that all construction equipment be maintained in good working order and fitted with factory approved mufflers. Adherence to these policies would result in a less than significant impact with regard to exposing persons to or generating excessive groundborne vibration or groundborne noise levels. Additional groundborne vibrations beyond baseline conditions are not anticipated as a result of operational activities, and the potential impact would be less than significant.

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

The Project is not located within the vicinity of a private airstrip or an airport land use plan, or within two miles of a public airport. There would be no impact.

3.14 Population and Housing

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

The proposed Project focuses on repaving Old Arcata Road by maintaining and improving adjacent facilities, such as sidewalks, cross walks, a pedestrian walkway, and underground utilities. The Project would also develop a new sidewalk along Hyland Street and construct a new roundabout at the Jacoby Creek Road intersection.

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 support unplanned population growth, such as new housing, roads, utilities, or other developments. The Project would extend an existing shared use path adjacent to Old Arcata Road, to complete the connection between the communities of Sunny Brae and Bayside. Project elements are not expected to induce population growth or result in a demand for additional housing. This extension and other Project components that would also improve the usability of the Old Arcata Road corridor for non-motorized users which may increase the desirability of the community to existing and future residents. The overall goal of the Project is to maintain and upgrade the existing roadway and associated municipal infrastructure (e.g. underground sewer and water services) to ensure existing levels of service continue without interruption for existing residents, schools, and businesses. There would be no impact.

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

The proposed Project would not displace people or housing or otherwise effect housing. There would be no impact.

3.15 Public Services

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

The Project would result in an overall benefit to public services by improving the quality and safety of the transportation corridor for fire and police protection services. Upgrades to pedestrian pathways, speed bumps, crosswalks, and sidewalks in front of Jacoby Creek Elementary School would improve safety conditions for students and staff. Adjacent parks (community gardens) would benefit from increased pedestrian and bicycle use and a corresponding potential decrease in vehicular use. Government facilities would not need to be constructed or altered.

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)

The City of Arcata General Plan Land Use Element includes Old Arcata Road as a transportation corridor. The proposed Project would not require any changes to maintain an acceptable service ratio for City of Arcata fire protection services and would improve the quality of the roadway for increased ease of use by fire protection service vehicles.

The City of Arcata Police Department currently provides services to Old Arcata Road and would continue to do so. The proposed Project would not create substantial adverse physical impacts by requiring new police department facilities.

The proposed Project would occur near Sunny Brae Middle School and adjacent to Jacoby Creek Elementary School. The proposed Project would not result in significant adverse effects on school district service ratios or school facilities for the same reasons discussed above for fire and police protection services. Streetscape improvements in front of Jacoby Creek Elementary School and the new roundabout at the Jacoby Creek Road intersection would improve safety for students and staff, as well as enhance walkability or bikeability of students to and from school along repaved and restriped bike lanes and the extended pedestrian pathway. There would be no impact.

3.16 Recreation

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

Two gardens are located along the Project corridor. The Bayside Park Farm and Community Garden is located on City-owned property near Sunny Brae, on the east side of Old Arcata Road. A school garden is located adjacent to Jacoby Creek Elementary School, on the west side of Old Arcata Road. Playground facilities at Jacoby Creek Elementary School may be informally used by the public when school is not in session.

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 proposed Project would not increase the use of existing neighborhood parks or recreational facilities. Access (e.g. additional parking, new roadway construction, directional signage) to the Bayside Park Farm and Community Garden or Jacoby Creek Elementary School playground would not be altered above existing conditions, such that a change in use would occur. There would be no impact.

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.

3.17 Transportation

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

The Project is a multi-modal transportation improvement Project, designed to be consistent with transportation policies from the City of Arcata and Humboldt County. The project is partially funded through the STIP, which is administered by Caltrans, and requires the Project be consistent with State and federal transportation policies. Traffic counts were most recently obtained at select location along Old Arcata Road in 2005 and 2006, resulting in an Average Daily Traffic (ADT) of less than 3,000 vehicles. While this data was collected more than ten years ago, it is assumed that the region is unlikely to add new development that would result in a significant increase in traffic volumes (SHN and Omni Means 2017).

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

City of Arcata

The Project is consistent with the City of Arcata's General Plan Transportation Element and its policies (City of Arcata 2008b), which addresses how transit facilities can be planned to achieve maximum individual mobility in a manner consistent with community character and environmental protection, including but not limited to:

- Policy T-1 Investment in alternative modes of transportation, such as bikeways.
- Policy T-5 Upgrade existing bicycle routes to a higher class (Old Arcata Road is included in the City of Arcata's bicycle route system plan.)
- Policy T-5f Prioritize implementation of improved pedestrian facilities and enhancements in areas of the city with the greatest need, including Bayside Road (Old Arcata Road) in the vicinity of Jacoby Creek Elementary School.
- Policy T-5g Provide pedestrian pathways and multi-use trails.
- Policy T-4b5 Consider roundabouts as an alternative to new traffic signals.

Humboldt County

A small portion of the Project Area at the Jacoby Creek Road intersection is located within the jurisdiction of Humboldt County. The Project is also consistent with the Humboldt County General Plan Circulation Element (2017e) and is supported by the following policies:

- C-P34 Use traffic calming measures where feasible to improve safety for all users, including roundabouts.
- C-1M18 Use roundabouts to ease congestion and provide a safe multi-modal circulation system.

During construction, traffic controls would be implemented. In accordance with jurisdictional requirements, the construction contractor would be required to obtain an encroachment permits and temporary traffic control approvals from the City of Arcata and County of Humboldt prior to beginning the work within their respective right-of-ways. As part of the encroachment permit process, the construction contractor would be required to prepare a traffic control plan for review and acceptance of planned work within the public right-of-way. The development and implementation of a traffic control plan would include, but not necessarily be limited to: temporary traffic control systems, delineators, signs, and flaggers conforming to the current California Manual of Uniform Traffic Control Devices. With the implementation of Mitigation Measure TR-1, the impact would be less than significant.

As a standard requirement, the City would require the Project contractor to develop and implement a temporary Traffic Control Plan outlining work zones, activities, and time needed to complete the work in each zone. As part of the Traffic Control Plan, the Project would be required to keep at least one lane open in each direction of travel on Old Arcata at all times during the construction process. Work performed on the segment adjacent to Jacoby Creek Elementary School would be scheduled to avoid work coincident with the school's start and end times, when traffic congestion is typically high. Any potential impact would be less than significant.

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

Section 15064.3, subdivision (b), of the CEQA Guidelines lists the criteria for analyzing transportation impacts from proposed Projects. The criteria are broken up into four categories, including land use Projects, transportation Projects, qualitative analysis, and methodology. Transportation Projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. This section was recently added by the state legislature in an attempt to separate CEQA's purpose and role from traffic or other issues related to ease of use of single occupancy vehicles. For this reason, impacts to parking are not analyzed as an environmental impact in the section or in other areas of this document. For roadway capacity Projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. Because the proposed Project would not increase the length of roadway, add new roadways, or increase the number of travel lanes, there would be no impact on vehicle miles travels. 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 is being designed in accordance with the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets, 7th Edition* (2018). In addition, the Project would be designed in accordance to other specific applicable standards, including the *2014 California Manual on Uniform Traffic Control Devices* (CA MUTCD 2020); the 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design; and

portions of the 2019 California Building Code and Caltrans *Highway Design Manual, 7th Edition* (2020). Given the Project would conform to roadway design requirements and follows a corridor that is generally straight, increases in hazards due to a geometric design feature or incompatible use would not occur. There would be no impact.

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

Construction activities would primarily occur within the public right-of-way, including travel lanes on Old Arcata Road, sidewalks, and other areas designated as right-of-way. During construction, the normal functionality of Old Arcata Road in the Project Area would be altered due to the need for temporary lane closures. The impact would only occur during the day when construction is ongoing given that vehicle access would be restored at the end of each workday through the use of steel trench plates or trench backfilling. However, the lane closures could result in delays for emergency response vehicles or temporarily block access to driveways and cross-streets along the route. The construction impact would be potentially significant without Mitigation Measure TR-2.

Following construction, the Project would be expected to improve overall emergency access as the added lanes would provide more space for emergency response vehicles to go around stopped vehicles and because it would add capacity, thereby reducing congestion that affects emergency response times. The proposed intermittent medians may make turning movements along portions of the corridor more difficult for larger fire response vehicles, however, such conditions are common along roadways with intermittent center medians. In such cases, emergency response vehicles may cross over medians or navigate around medians through oncoming traffic lanes. The operational impact would be less than significant.

Mitigation

Mitigation Measure TR-1 would reduce the temporary impact of construction activities on emergency access to a less-than-significant level by requiring the City and its contractors to have ready at all times the means necessary to accommodate access by emergency vehicles, as well as notifying emergency responders in advance of construction activities.

Mitigation Measure TR-1: Maintain Emergency Access and Notify Emergency Responders

The City shall require contractors to provide adequate emergency access to all properties along the corridor during the construction process. At locations where the access to a nearby property is temporarily blocked, the contractor shall be required to have ready the means necessary to accommodate access by emergency vehicles to such properties, such as plating over excavations. As construction progresses, emergency providers shall be notified in advance of the timing, location, and duration of construction activities and the locations and durations of any temporary lane closures.

With implementation of Mitigation Measure TR-1, any potential impact to emergency access during construction would be less than significant.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?		✓		
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.		✓		

On August 30, 2019, formal AB 52 letters were sent to area tribal governments by Caltrans, in coordination with the City, to provide notification of the decision to undertake a project and consultation opportunities. The letters were distributed to the TPHOs at the Blue Lake Rancheria, Wiyot Tribe, and Bear River Band of the Rohnerville Rancheria. All three tribes responded requesting consultation under AB 52 (see Section 1.8 – Tribal Consultation). Completion of the AB 52 process has been formalized in a completion letter to THPOs, dated December 15, 2020.

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

As a result of formal AB 52 consultation and findings of cultural resource investigations (see Section 3.5 – Cultural Resources), consulting tribes have indicated that tribal historic resources are not known to be present within and near the Project Area. In order to ensure potential impacts to unknown tribal historic resources that may be present remain less than significant, Mitigation Measure CR-1 will be implemented to include development and implementation of an MOU as an outcome of the AB-52 process. With the implementation of Mitigation Measure CR-1, potential impacts to tribal cultural resources would be less than significant.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				✓
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?				✓

Project activities relating to utilities include new and upgraded storm drain piping, stormwater swales catch basins, and junction boxes. Existing sewer laterals may be replaced with new cleanouts. Water service connections may also be updated, along with resetting and/or installing water meters. Electrical infrastructure would be required to power the proposed street lighting.

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 includes new storm water drainage facilities, including roadside storm water swales, and storm drain piping. The potential environmental impacts associated with construction of the new and/or upgraded utilities are evaluated as part of this Initial Study. The following subjects are related to the proposed storm water drainage facilities, and are evaluated in other sections of this Initial Study:

- Potential impacts related to biological resources are evaluated in Section 3.4 (Biological Resources).

- Potential impacts related to cultural resources are evaluated in Section 3.5 (Cultural Resources).
- Potential impacts related to hydrology and water quality are evaluated in Section 3.9 (Hydrology and Water Quality).

No additional storm water drainage facilities or expansion of existing facilities beyond those identified in the Project description (GHD 2019) and evaluated in this Initial Study would be required. Therefore, no additional 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)

During construction, City water supplies could potentially be used for dust control and other activities. Construction-related water demands would be short-term and minimal in volume and would be sufficiently served by existing entitlements. Following construction, the Project would not directly or indirectly induce population growth and would not result in an increased demand for water. Therefore, no new entitlements or facilities would be required. 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)

Following construction, the Project would not directly or indirectly induce population growth and would not increase the amount of wastewater generated. The Project would install new and upgraded sewer laterals and associated connectors along a portion of Old Arcata Road; however, the replaced sewage infrastructure would not increase wastewater generation or capacity. Because there would be no increase in wastewater discharges, the Project would not impair the ability of the City of Arcata Waste Water Treatment Plant to continue serving existing commitments. No impact would occur.

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? (Less Than Significant)

Construction of the Project would result in a temporary increase in solid waste disposal needs associated with demolition and construction wastes. Construction wastes would include, but not be limited to, demolished asphalt pavement, concrete, small tree/shrub removals, and excavated soils. Many of these materials can be delivered to facilities for recycling, composting or reuse. Construction waste with no practical reuse or that cannot be salvaged, composted or recycled would be disposed of at a local transfer station. Active permitted in-County transfer stations include the Humboldt Waste Management Authority facilities in Eureka or Samoa, California and Humboldt Sanitation's McKinleyville, California transfer station. Solid waste generated by the Project would represent a small fraction of the daily permitted tonnage of these facilities. This would be a less than significant impact on landfill capacity with the implementation of federal, state, and local statutes and regulations related to solid waste. Therefore, the Project's construction-related solid waste disposal needs would be sufficiently accommodated by existing landfills, and the impact would be less than significant. Following construction, Project operation would not generate additional solid waste. No operational impact would occur.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No Impact)

No applicable federal solid waste regulations would apply to the Project. At the State level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. The Project would not conflict with or impede implementation of such programs. Following construction, Project operation would not generate additional solid waste. Therefore, no constructional operational impact would occur.

3.20 Wildfire

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

The entire Project is located on lands near or with a State Responsibility Area (SRA)The portion of the Project located within the City of Arcata jurisdiction is not within the SRA. The portion of Project that is within the jurisdiction of Humboldt County, nearest Jacoby Creek Road, is within the SRA for fire protection.

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

As discussed in Section 3.9 (f), the City of Arcata does not have an independent emergency response plan. The Humboldt County Emergency Operations Plan (Humboldt County 2015) does not designate specific evacuation routes or emergency shelter locations, or include policies or procedures with which the Project would conflict. Therefore, the Project would not impair implementation of or physically interfere with the plan. No impact would occur.

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

The Project Area includes very low slopes in the coastal bottomland near Humboldt Bay where coastal winds are common. Fire ignition risk associated with construction activities is low and limited to accidental ignition associated with a potential heavy machinery-related incident. The Project would not otherwise increase exposure to wildlife fire above existing conditions. The impact would be less than significant.

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? (Less Than Significant Impact)

Repaving of Old Arcata Road would result in a low fire ignition risk, associated with a potential heavy machinery accident (discussed in Section 3.20 (b) above). Ongoing operation and use of the Project corridor after construction is complete would not result in an exacerbated fire risk.

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)

Project construction would not expose people or structures to significant risk. The Project is located in the low-lying, generally flat bottomlands surrounding Humboldt Bay. The immediate Project Area is not forested, although the trees and vegetation are present. The sloped hillside of the Arcata Community Forest is located approximately 0.3 miles east of the Project alignment, nearest the northern endpoint. Because the Project is located in flat bottomlands, risk of flooding or landslides associated with post-fire slope instability or changes in drainage is extremely low. The potential impact is less than significant.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?		✓		
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)?				✓
c) Does the Project 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 with Mitigation)

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

Mitigation measures are listed herein to reduce impacts related to Aesthetics, Biological resources, Cultural Resources, Geology, Hazards and Hazardous Materials, Hydrology, and Transportation, and Tribal Cultural Resources. With implementation of the required mitigation measures, impacts would be less than significant.

b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past

Projects, the effects of other current Projects, and the effects of probable future Projects)? (No 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 Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Other related or unrelated Projects have not occurred within the Project corridor, nor are any planned to occur. There would be no impact.

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

The Project has been planned and designed to avoid significant environmental impacts. As discussed in the analysis throughout Section 3 of this IS/MND, the Project would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings. The impact is less than significant.

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5. Report Preparers

5.1 LEAD AGENCY

David Loya, City of Arcata

5.2 GHD

Andrea Hilton
Marlys Jeane
Chryss Meier
Misha Schwarz
Josh Wolf, P.E.

5.3 Sub-consultants

William Rich, William Rich and Associates
Arlin Brewster, Northstar Environmental Remediation
Lisa Holm and Hannah Ballard, Pacific Legacy, Inc.
Chris McMorris and Steven “Mel” Melvin, JRP Historical Consulting, LLC

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Appendices

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Appendix A
CalEEMod Results for Air Quality and Greenhouse Gas Emissions

Appendix B
Natural Environment Study

Appendix C
Historic Resources Report

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Appendices

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Appendix A
CalEEMod Results for Air Quality and Greenhouse Gas Emissions

Old Arcata Road Improvements

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Parking	2.50	User Defined Unit	2.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction-Only

Land Use - 1 Mile Long, Appx. 20 feet wide of Pavement = 2.5 acres of Roadway

Construction Phase - Project-specific phasing

Off-road Equipment - Project-specific fleet

Grading - Materials movement unknown, assumed nominal amount (80 cy) for each Grubbing and Grading

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	14.00
tblConstructionPhase	NumDays	6.00	21.00
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	NumDays	3.00	14.00

tblConstructionPhase	PhaseEndDate	8/19/2019	2/11/2021
tblConstructionPhase	PhaseEndDate	8/30/2019	4/1/2021
tblConstructionPhase	PhaseEndDate	7/17/2020	5/31/2021
tblConstructionPhase	PhaseEndDate	8/22/2019	3/4/2021
tblConstructionPhase	PhaseStartDate	7/23/2019	1/23/2021
tblConstructionPhase	PhaseStartDate	8/23/2019	3/4/2021
tblConstructionPhase	PhaseStartDate	7/4/2020	5/12/2021
tblConstructionPhase	PhaseStartDate	8/20/2019	2/13/2021
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tblGrading	MaterialExported	0.00	80.00
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tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes

tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00

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					
2021	0.0616	0.5443	0.6340	1.0100e-003	5.9000e-003	0.0280	0.0339	1.5700e-003	0.0262	0.0278	0.0000	87.4498	87.4498	0.0218	0.0000	87.9947
Maximum	**0.0616**	**0.5443**	**0.6340**	**1.0100e-003**	**5.9000e-003**	**0.0280**	**0.0339**	**1.5700e-003**	**0.0262**	**0.0278**	**0.0000**	**87.4498**	**87.4498**	**0.0218**	**0.0000**	**87.9947**

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	1/23/2021	2/11/2021	5	14	
2	Grubbing/Land Clearing	Site Preparation	2/13/2021	3/4/2021	5	14	
3	Grading/Excavation	Grading	3/4/2021	4/1/2021	5	21	
4	Paving	Paving	5/12/2021	5/31/2021	5	14	
5	Drainage/Utilities/Subgrade	Trenching	4/2/2021	4/21/2021	5	14	
6	Trenching (Trenchless)	Trenching	4/22/2021	5/11/2021	5	14	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	1	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grubbing/Land Clearing	Excavators	1	8.00	158	0.38
Grubbing/Land Clearing	Generator Sets	1	8.00	84	0.74
Grubbing/Land Clearing	Signal Boards	2	8.00	6	0.82
Grubbing/Land Clearing	Skid Steer Loaders	1	8.00	65	0.37
Grubbing/Land Clearing	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading/Excavation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading/Excavation	Excavators	2	8.00	158	0.38
Grading/Excavation	Rollers	2	8.00	80	0.38
Grading/Excavation	Signal Boards	2	8.00	6	0.82

Drainage/Utilities/Subgrade	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Drainage/Utilities/Subgrade	Excavators	1	8.00	158	0.38
Drainage/Utilities/Subgrade	Generator Sets	1	8.00	84	0.74
Drainage/Utilities/Subgrade	Plate Compactors	2	8.00	8	0.43
Drainage/Utilities/Subgrade	Rough Terrain Forklifts	1	8.00	100	0.40
Drainage/Utilities/Subgrade	Signal Boards	2	8.00	6	0.82
Drainage/Utilities/Subgrade	Skid Steer Loaders	1	8.00	65	0.37
Trenching (Trenchless)	Excavators	1	8.00	158	0.38
Trenching (Trenchless)	Generator Sets	1	8.00	84	0.74
Trenching (Trenchless)	Skid Steer Loaders	1	8.00	89	0.37
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Signal Boards	2	8.00	6	0.82

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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grubbing/Land Clearing	6	15.00	0.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Excavation	8	20.00	0.00	10.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Subgrade	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching (Trenchless)	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

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	0.0129	0.1264	0.0927	1.6000e-004		6.4500e-003	6.4500e-003		6.0300e-003	6.0300e-003	0.0000	14.1047	14.1047	3.5600e-003	0.0000	14.1938
Total	**0.0129**	**0.1264**	**0.0927**	**1.6000e-004**		**6.4500e-003**	**6.4500e-003**		**6.0300e-003**	**6.0300e-003**	**0.0000**	**14.1047**	**14.1047**	**3.5600e-003**	**0.0000**	**14.1938**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	4.7000e-004	3.8200e-003	1.0000e-005	5.4000e-004	1.0000e-005	5.5000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4856	0.4856	3.0000e-005	0.0000	0.4864
Total	**5.5000e-004**	**4.7000e-004**	**3.8200e-003**	**1.0000e-005**	**5.4000e-004**	**1.0000e-005**	**5.5000e-004**	**1.4000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4856**	**0.4856**	**3.0000e-005**	**0.0000**	**0.4864**

3.3 Grubbing/Land Clearing - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7500e-003	0.0626	0.0785	1.3000e-004		3.1700e-003	3.1700e-003		3.0300e-003	3.0300e-003	0.0000	10.9520	10.9520	2.3300e-003	0.0000	11.0102
Total	**6.7500e-003**	**0.0626**	**0.0785**	**1.3000e-004**	**0.0000**	**3.1700e-003**	**3.1700e-003**	**0.0000**	**3.0300e-003**	**3.0300e-003**	**0.0000**	**10.9520**	**10.9520**	**2.3300e-003**	**0.0000**	**11.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.5300e-003	2.5000e-004	0.0000	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3768	0.3768	1.0000e-005	0.0000	0.3771
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.2000e-004	7.1000e-004	5.7300e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.2000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7284	0.7284	5.0000e-005	0.0000	0.7296
Total	**8.6000e-004**	**2.2400e-003**	**5.9800e-003**	**1.0000e-005**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**2.4000e-004**	**2.0000e-005**	**2.5000e-004**	**0.0000**	**1.1052**	**1.1052**	**6.0000e-005**	**0.0000**	**1.1067**

3.4 Grading/Excavation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0139	0.1327	0.1618	2.4000e-004		7.2800e-003	7.2800e-003		6.7200e-003	6.7200e-003	0.0000	21.0281	21.0281	6.5900e-003	0.0000	21.1930
Total	**0.0139**	**0.1327**	**0.1618**	**2.4000e-004**	**0.0000**	**7.2800e-003**	**7.2800e-003**	**0.0000**	**6.7200e-003**	**6.7200e-003**	**0.0000**	**21.0281**	**21.0281**	**6.5900e-003**	**0.0000**	**21.1930**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.5300e-003	2.5000e-004	0.0000	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3768	0.3768	1.0000e-005	0.0000	0.3771
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	1.6400e-003	1.4100e-003	0.0115	2.0000e-005	1.6200e-003	2.0000e-005	1.6400e-003	4.3000e-004	1.0000e-005	4.5000e-004	0.0000	1.4567	1.4567	1.0000e-004	0.0000	1.4592
Total	**1.6800e-003**	**2.9400e-003**	**0.0117**	**2.0000e-005**	**1.7000e-003**	**3.0000e-005**	**1.7300e-003**	**4.5000e-004**	**2.0000e-005**	**4.8000e-004**	**0.0000**	**1.8335**	**1.8335**	**1.1000e-004**	**0.0000**	**1.8363**

3.5 Paving - 2021

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	9.1500e-003	0.0903	0.1003	1.5000e-004		4.9600e-003	4.9600e-003		4.5800e-003	4.5800e-003	0.0000	13.0697	13.0697	4.0900e-003	0.0000	13.1719
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.1500e-003**	**0.0903**	**0.1003**	**1.5000e-004**		**4.9600e-003**	**4.9600e-003**		**4.5800e-003**	**4.5800e-003**	**0.0000**	**13.0697**	**13.0697**	**4.0900e-003**	**0.0000**	**13.1719**

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	1.0900e-003	9.4000e-004	7.6400e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9711	0.9711	7.0000e-005	0.0000	0.9728
Total	**1.0900e-003**	**9.4000e-004**	**7.6400e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9711**	**0.9711**	**7.0000e-005**	**0.0000**	**0.9728**

3.6 Drainage/Utilities/Subgrade - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.1800e-003	0.0774	0.0976	1.6000e-004		3.7400e-003	3.7400e-003		3.5700e-003	3.5700e-003	0.0000	13.5123	13.5123	3.0600e-003	0.0000	13.5887
Total	**8.1800e-003**	**0.0774**	**0.0976**	**1.6000e-004**		**3.7400e-003**	**3.7400e-003**		**3.5700e-003**	**3.5700e-003**	**0.0000**	**13.5123**	**13.5123**	**3.0600e-003**	**0.0000**	**13.5887**

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	1.2600e-003	1.0800e-003	8.7900e-003	1.0000e-005	1.2400e-003	1.0000e-005	1.2500e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1168	1.1168	7.0000e-005	0.0000	1.1187
Total	**1.2600e-003**	**1.0800e-003**	**8.7900e-003**	**1.0000e-005**	**1.2400e-003**	**1.0000e-005**	**1.2500e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.1168**	**1.1168**	**7.0000e-005**	**0.0000**	**1.1187**

3.7 Trenching (Trenchless) - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.8300e-003	0.0469	0.0621	1.0000e-004		2.3000e-003	2.3000e-003		2.2100e-003	2.2100e-003	0.0000	8.8824	8.8824	1.8000e-003	0.0000	8.9273
Total	**4.8300e-003**	**0.0469**	**0.0621**	**1.0000e-004**		**2.3000e-003**	**2.3000e-003**		**2.2100e-003**	**2.2100e-003**	**0.0000**	**8.8824**	**8.8824**	**1.8000e-003**	**0.0000**	**8.9273**

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	4.4000e-004	3.8000e-004	3.0600e-003	0.0000	4.3000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3885	0.3885	3.0000e-005	0.0000	0.3891
Total	**4.4000e-004**	**3.8000e-004**	**3.0600e-003**	**0.0000**	**4.3000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3885**	**0.3885**	**3.0000e-005**	**0.0000**	**0.3891**

Appendix B
Natural Environment Study

City of Arcata

Natural Environment Study

Old Arcata Road Rehabilitation & Pedestrian/Bikeway Improvements

Bayside and Arcata

Humboldt County, California

Caltrans District 01

Federal Project No. RPSTPL-5021(023)

January 2020

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

City of ARCATA

Natural Environment Study

STATE OF CALIFORNIA
Department of Transportation
City of Arcata

Prepared By: _____ Date: 01/22/2020
Gabriel Valdes, Senior Biologist
(928) 221-9971
Northstar Environmental, Lake Forest, CA
Consultant

Prepared By: _____ Date: 1/22/20
Josh Wolf, Project Manager
(707) 443-8326
GHD, Inc., Eureka, CA
Consultant

Prepared By: Julie Neander Date: 8/20/2020
Julie Neander, Environmental Coordinator
(707) 825-2151
City of Arcata – Recreation Division
Authorized Local Agency Representative

for Approval By: Christa Unger Date: 08/25/2020
Christa Unger, District Biologist and Environmental Planner
(707) 441-5604
Eureka, CA
California Department of Transportation, District 1

Approved By: _____ Date: 9/02/2020
Darrell Cardiff, Senior Environmental Planner
(707) 298-0904
Eureka, CA
California Department of Transportation, District 1

Abbreviations

APE	Area of Potential Effect
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
BSA	Biological Study Area
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Ranking
CWA	Clean Water Act
DOT	Department of Transportation
ESHA	Environmental Sensitive Habitat Area
FESA	Federal Endangered Species Act
GHD	GHD Inc.
GIS	Geographic Information System
GPS	Global Positioning System
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NES	Natural Environmental Study
NMFS	National Marine Fisheries Service
NRCS	National Resources Conservation Service
PES	Preliminary Environmental Survey
PJD	Preliminary Jurisdictional Determination
Project	Old Arcata Road Improvement Project
RWQCB	North Coast Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
TSC	Transportation Safety Committee
USACE	United States Army Corp of Engineers
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Summary

Project Purpose, Need, and Description: The Project is primarily located within the limits of the City of Arcata and Bayside in Humboldt County, California. The primary permitting jurisdiction resides with the Local Coastal Programs of both the City of Arcata and Humboldt County for their respective portions of the Project. The purpose of the proposed Project is to improve connectivity and construct safety improvements to an approximate one-mile section of the Old Arcata Road, including associated improvements to the pedestrian and bicycle paths along the route and the development of a roundabout to control traffic flow. All work will occur within the existing City of Arcata or Humboldt County right-of-ways, except for driveway conforms to replace existing driveways to provide for smooth transitions to improvements, and the replacement of sanitary sewer laterals.

The overall need for this Project is to improve the safety of this transportation corridor and to address community safety concerns including excessive vehicle speeds, unsafe passing resulting from narrow roads, inadequate and unsafe parking conditions at Jacoby Creek Elementary School, limited pedestrian crosswalks, inadequate or non-existent pedestrian sidewalks, and an overall need for safety improvements at the intersection of Jacoby Creek Road and Old Arcata Road.

Habitat Effects: The Project Area is within the Redwood – Douglas Fir vegetation community with Old Arcata Road the dominant feature throughout the Project Area. The botanical survey identified individual redwood trees adjacent to Old Arcata Road but determined they did not constitute a forest community and are not considered Environmentally Sensitive Habitat Areas.

A small potential wetland area of 0.04 acres (1,600 square feet) exists adjacent to the north side of Jacoby Creek Road. Communication with Kasey Sirkin of the USACE confirmed that the potential wetland was smaller than the USACE discretionary threshold of 0.10 acres, and therefore mitigation would not be required by the USACE. However, it is anticipated that the North Coast Regional Water Quality Control Board will require mitigation.

No additional special concern habitats or natural communities exist within the BSA.

Special Status Species Effects: No special status plant species were identified within the BSA. Per GHD, a consultation with California Department of Transportation (Caltrans) officials during development of the Preliminary Environmental Survey determined that the potential for federally listed threatened or endangered species, or their critical habitat or essential fish habitat to occur within or adjacent to the construction area was to be determined. Subsequent review of special status species indicated they were unlikely to occur within the Biological Study Area (BSA), with the potential exception of the Northern Red-legged Frog, which may occur in areas adjacent the BSA.

Permits Required: Prior to the start of construction, the following permits, certifications, and approvals are required:

- California Environmental Quality Act (CEQA) Compliance
- National Environmental Policy Act (NEPA) Compliance
- Humboldt County:
  - Coastal Development Permit

    - Encroachment Permit
    - Grading Permit
- City of Arcata:
    - Coastal Development Permit
    - Encroachment Permit
    - Grading Permit
    - Tree Removal Permit (if required)
- North Coast Regional Water Quality Control Board (RWQCB) Clean Water Act (CWA) Section 401 Compliance
- United States Army Corp of Engineers (USACE) CWA Section 404 Compliance

Per Kasey Sirkin of the USACE, while the potential wetland area (0.04 acres) adjacent to the north side of Jacoby Creek Road is below the USACE discretionary threshold (0.10 acres), a Section 404 permit application would still be required.

Invasive Species: No survey of invasive species within the BSA was conducted in preparation for this Project. However, a number of invasive grass species were identified during the wetland delineation survey, including tall fescue (*Festuca arundinacea* synonym: *Schedonorus arundinaceus*), creeping bent (*Agrostis stolonifera*), and velvet grass (*Holcus lanatus*), all of which are rated as facultative species and are present throughout the area.

Minimization Measures: While no special status plant or wildlife species have been identified within the BSA, the potential exists for the Northern Red-legged Frog to occur in areas adjacent to the BSA, and by extension, potentially within the BSA. As such, efforts will be taken to prevent damages to the BSA and adjacent habitats through the use of BMPs and SWPPP inspections.

Physical controls will include temporary BMPs such as straw waddles, sandbags, silt screen, vehicle dry brushing, rumble grids, containment berms, and spill kits to prevent potential contamination by hazardous substances and invasive species.

Administrative controls will include regular SWPPP inspections, vehicle maintenance, and Project scheduling (for example, vegetation clearing may occur during the non-bird nesting season, between August 16th and March 14th; and, work near wetlands will only occur during the dry season between May and October).

Due to the high probability of precipitation occurring during the construction phase, an emphasis on controlling stormwater runoff must be addressed (see Section 4.1.4). Additional stormwater control measures must be considered to minimize impacts to adjacent wetlands, including such features as stormwater culverts, diversions, and the use of stockpile covers to actively contain stormwater runoff.

With regards to migratory birds, an effort will be made to perform vegetation clearing outside the bird nesting season (March through August); however, if clearing must occur during the nesting season, it is recommended that a qualified biologist should be employed to conduct a nest survey within 10 days of the start of construction. Active nests should be protected from disturbance with the appropriate buffer. Buffer zones will be delineated with flagging and maintained until the nests have fledged or nesting activity has ceased, as determined by the qualified biologist. If vegetation clearing work lapses for 10 days or longer during the nesting season, a qualified biologist shall conduct a supplemental nest survey before Project work is reinitiated.

Mitigation Measures: The Project may include onsite wetland establishment within the City's right-of-way between Old Arcata Road and Bayside Road. Approximately 1,600 square feet of wetland establishment is anticipated. Groundwater data will be obtained and used to inform wetland design grading depths to ensure wetland hydrology criteria are met. Wetlands will be established by excavating to a target elevation.

Contents

1.0 – Introduction

On behalf of GHD Inc. (GHD), Northstar Environmental of Lake Forest, California conducted a review of associated environmental studies performed by others for the Old Arcata Road Improvement Project (Project) and prepared this *Natural Environment Study* (NES) for the Project in August 2019. GHD performed the field surveys and generated the supporting documentation required for this NES, including the *Preliminary Environmental Study* (PES) (GHD 2018a; included in Appendix B), *Special Status Plant Survey and ESHA Evaluation for the Old Arcata Road Improvement Project* (GHD 2018b; included in Appendix C), and the *Wetland Delineation Report* (GHD 2019a; included in Appendix D). This NES has been prepared in part to satisfy the requirements of NEPA compliance, and the response letter to the PES from the Caltrans dated December 19, 2018 (Caltrans 2018).

1.1 - Project History

The purpose of the proposed Project is to improve connectivity and construct safety improvements to an approximate one-mile section of the Old Arcata Road in Humboldt County, California, including associated improvements to the pedestrian and bicycle paths along the route and the development of a roundabout to control traffic flow.

The overall need for this Project is to improve the safety of this transportation corridor. In 2016, the City of Arcata Transportation Safety Committee (TSC), as part of a review of conditions along Old Arcata Road, identified an inadequate and disconnected presence of pedestrian and bicycle facilities in the Project Area. Further community outreach (City of Arcata, 2017) identified additional safety concerns including excessive vehicle speeds, unsafe passing resulting from narrow roads, inadequate and unsafe parking conditions at Jacoby Creek Elementary School, limited pedestrian crosswalks, inadequate or non-existent pedestrian sidewalks, and an overall need for safety improvements at the intersection of Jacoby Creek Road and Old Arcata Road for all conditions above.

The Project will address these safety concerns, repair damaged pedestrian and motorist facilities, and bring existing walkways, driveways, and curbs along the route up to current code.

1.2 - Project Description

The entirety of Section 1.2 was provided by GHD (unless otherwise indicated) as part of a draft Project description document, which is subject to change (GHD 2019b).

The Project is primarily located within the limits of the City of Arcata (Figure 1 in Appendix A). The proposed roundabout at the Jacoby Creek Road, along with its eastern and southern approaches (on Jacoby Creek Road, and Old Arcata Road, respectively) are located within the jurisdiction of Humboldt County. West of Old Arcata Road, the Project is primarily located within the Coastal Zone. East of Old Arcata Road, the Project is located outside the Coastal Zone boundary (Figure 2 in Appendix A). The primary permitting jurisdiction resides with the Local Coastal Programs of both the City of Arcata and Humboldt County for their respective portions of the Project. All work will occur within the existing City of Arcata or Humboldt County right-of-ways, with the exception of driveway conforms to replace existing driveways to provide for smooth transitions to improvements, and the replacement of sanitary sewer laterals.

Old Arcata Road is an eastern alternate to U.S. Highway 101 (US 101) between the cities of Arcata and Eureka, with connectivity to US 101 at the Bayside Cutoff [to the south and the Samoa Boulevard interchange to the north] (Figure 1 in Appendix A). The Project is in Section 33 of Township 6 North, Range 1 East of the Arcata South U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle. The northern and southern boundaries of the Project are located at latitude 40°51'20.20" N and longitude 124°04'16.03" W and latitude 40°50'29.23" N and longitude 124°03'53.46" W, respectively. The Project endpoint along the Jacoby Creek Road alignment is located at latitude 40°50'30.82" N and longitude 124°03'44.85" W.

The elevation within the Project Area ranges from approximately 20 to 55 feet above mean sea level. The Project can be accessed from Arcata by taking the SR 255/Samoa exit from US 101 and heading east toward Sunnybrae. The northern endpoint of the Project begins approximately 600 feet south of the Buttermilk [Lane] Roundabout along Old Arcata Road, and the southern endpoints of the Project Area located near the Jacoby Creek Road intersection with Old Arcata Road (Figure 1 in Appendix A).

1.2.1 – Proposed Project Elements

Key elements of the Old Arcata Road Improvement Project are shown in Figure 3 (Appendix A). The figure was provided by GHD as part of a draft Project description document (GHD 2019b).

Repaving Along Old Arcata Road and Adjacent Bike Lanes

Old Arcata Road will be repaved between approximately 600 feet south of the Buttermilk [Lane roundabout] to the proposed new roundabout at the Jacoby Creek Road intersection. Repaving will extend approximately 300 feet beyond the new roundabout along both Jacoby Creek Road and Old Arcata Road. The existing roadway width, alignment, and footprint will be similar to post-project dimensions and alignment between the Buttermilk [Lane] Roundabout and Hyland Street, including 10-foot travel lanes and adjacent 5-foot bikes lanes. A left-hand turn lane for north bound traffic may be included for the Jacoby Creek Elementary School parking lot at the Hyland Street intersection. South of Hyland Street, the existing roadway alignment may be shifted east up to 5 feet to accommodate a new 6-foot wide walkway, described below.

The existing asphalt roadway will be rehabilitated by overlaying the existing surface and/or grinding-out and replacing the existing surface. Excavation will not extend into the native subgrade, except in isolated areas where deeper excavations may be required to remediate poor soil/subgrade conditions.

Portions of existing driveways, including the Bayside Post Office driveway, will also be repaved.

Pedestrian Walkway

The existing walkway between the Buttermilk Road Roundabout and Hyland Street will be replaced or widened to a width of approximately 6 feet.

South of Hyland Street, the existing roadway alignment may be shifted east up to 5 feet to accommodate a new 6-foot wide walkway. The 6-foot wide walkway will be separated

from the roadway by a 5-foot wide vegetated strip that may also be designed to convey stormwater. Areas of new asphalt roadway will be constructed over 12 to 16 inches of base material and a similar depth of excavation.

In front of Jacoby Creek Elementary School, a new 6-foot wide sidewalk (4 inches of concrete over 6 inches of base) is proposed on the west side of the road. Some minor modifications to the school parking lot will be required to conform to the new sidewalk. Excavation for sidewalk and parking modifications are expected to be less than 1 foot in depth.

Crosswalks and Speed Humps

Existing crosswalks and speed humps will be upgraded coincident with repaving. New speed humps will be located north of the Hyland Street intersection and south of Jacoby Creek Elementary School to improve safety and provide vehicular speed control. A raised crosswalk in front of Jacoby Creek Elementary School at the Hyland Street intersection will remain. Crosswalks will also be integrated into the new Jacoby Creek Road Roundabout, discussed below. All crosswalks across Old Arcata Road and Jacoby Creek Road may also be enhanced with push button activated warning lights (e.g. LED enhanced signs or rapid rectangular flashing beacons).

Sidewalk, Curb Ramps, Gutters, and Retaining Structures

In front of Jacoby Creek Elementary School, a new 6-foot wide sidewalk (4 inches of concrete over 6 inches of base) is proposed on the west side of the road. Some minor modifications to the school parking lot will be required to conform to the new sidewalk. Excavation for sidewalk and parking modifications is expected to be less than 1 foot in depth. Construction of a new sidewalk along approximately 375 feet of Hyland Street is also included in the Project. Where necessary, curb ramps and gutters will be integrated into the sidewalk design. A new retaining wall will be constructed near the Jacoby Creek Road roundabout.

Turn Lane

Existing park located along Old Arcata Road in front of Jacoby Creek Elementary School will be replaced with a designated turn lane into the school parking lot to ease congestion and improve safety.

Jacoby Creek Road Roundabout

A new roundabout is proposed for the intersection at Jacoby Creek Road and Old Arcata Road to improve traffic flow and user safety. The roundabout will be configured to be within existing City and County right-of-way to the extent practical, although some encroachments onto private property may be necessary and may require acquisitions or easements. Excavation to accommodate the roundabout and roadway approaches is expected generally to be approximately 2 to 4 feet, although some isolated deeper excavations may be required to remediate poor soil/subgrade conditions.

Lighting

The Project may include streetlight installation in conjunction with the new Jacoby Creek Road roundabout. Lighting will be designed to protect wildlife and nighttime views,

including views of the night sky. This design goal would be satisfied using a variety of means as applicable, including fixture types, cut off angles, shields, lamp arm extensions, and pole heights. Specific design preferences include directing light downward and away from other properties, avoiding brightly illuminated vertical surfaces where feasible, such as walls and lamp poles, and directing lighting away from sensitive habitat areas.

Striping, Signage and Vehicle Control

The repaved Old Arcata Road and Jacoby Creek Road segments will include required striping and signage in order to comply with California Manual on Uniform Traffic Control Devices (MUTCD) requirements.

Storm Drain and Sanitary Sewer Infrastructure Improvements

Storm drain improvements include new and upgraded storm drain piping, catch basins, and junction boxes. Excavation and trenching depths for storm drain systems will be approximately 4 feet (6 feet max). Work may also include the installation of shallow swales to convey and treat stormwater runoff.

Existing sanitary sewer laterals may be replaced with new cleanouts placed at the edge of the right-of-way. Depth of excavation/trenching for sewer lateral replaced will be approximately 3 feet (6 feet max).

Wetland Establishment

The Project may include onsite wetland creation within the City's right-of-way between Old Arcata Road and Bayside Road. Approximately 1,600 square feet of wetland creation is anticipated. Groundwater data will be obtained and used to inform wetland design grading depths to ensure wetland hydrology criteria are met. The criteria for meeting wetland hydrology as defined by the USACE is flooding or ponding, or a water table within 12 inches of the soil surface for 14 or more consecutive days (USACE 2010). Wetlands will be established by excavating to a target elevation.

1.2.2 – Proposed Construction Activity

Construction Schedule

Construction is anticipated to occur over a six to eight-month construction window planned for 2021. Vegetation clearing may occur during the non-bird nesting season, between August 16th and March 14th. Work near wetlands will only occur during the dry season between May and October. Anticipated daytime work hours are 7:00 a.m. to 7:00 p.m., Monday through Friday with occasional work on Saturdays. Construction on Sunday or legal and county holidays is not currently anticipated except for emergencies or with prior approval from the City of Arcata.

Construction Staging, Activities and Equipment

Construction staging areas will be identified during the design phase of work and are expected to occur within the Project footprint, or within paved, graveled or designated, previously disturbed areas. Spoils or construction materials will be stored on site within previously designated staging areas only.

Construction will primarily include trimming and/or removal of trees and vegetation, excavation and grading, roadway, walkway, and driveway entrance paving, replacement of sanitary sewer laterals, and trenching and excavation to install new sanitary sewer laterals and storm drainage systems (inlets, pipes, and/or culverts). Construction will also include installation of new lighting, new crosswalks and upgraded crosswalks and speed bumps, a short retaining wall, and signage along the Project alignment. All construction activities would be accompanied by both temporary and permanent erosion and sediment control best management practices (BMPs).

Project construction will include the following activities:

- Clearing and grubbing – To clear trees, vegetation and topsoil from the proposed trail footprint
- Excavation – Primarily at shallow excavations to maintain design grades
- Embankment – Fill to maintain design grades through low areas
- Aggregate base – For walkway and roadway shoulders and to support asphalt and concrete paving
- Retaining wall – To prevent encroachments onto private property
- Concrete curbs, gutters, walkways, sidewalks and curb ramps
- Hot mix asphalt and concrete paving – For roadway, walkway, sidewalk and parking surfaces
- Crosswalks, enhanced signage and lighting – For safety
- Speed humps – For speed control and safety
- Striping and signage

Equipment required for construction would include: tracked excavators, backhoes, graders, bulldozers, dump trucks, rollers, pavers, water trucks, and pick-up trucks. It is not anticipated that any temporary utility extensions, such as electric power or water, would be required for construction.

Construction Access and Hauling Traffic

The anticipated Project haul truck routes include Old Arcata Road and Samoa Boulevard with connection to the US 101 Samoa Boulevard interchange in Arcata, and Old Arcata Road and Bayside Cutoff with connection to US 101 Bayside Cutoff intersection. The number of construction-related vehicles traveling to and from Project Area will vary on a daily basis. It is anticipated that up to 60 haul truck round trips would occur on a peak day. In addition, it is anticipated that construction crew trips would require up to eight round trips per day. Therefore, for the purposes of analysis, on any one day during construction, up to 68 vehicle round trips could occur.

Traffic Control

In accordance with jurisdictional requirements, the construction contractor would be required to obtain an encroachment permit and temporary traffic control approvals from the City of Arcata and Humboldt County prior to beginning the work within their respective right-of-ways. As part of the encroachment permit process, the construction contractor would be required to prepare a traffic control plan for review and acceptance of planned work within the public right-of-way. The development and implementation of a traffic control plan would include, but not necessarily be limited to: temporary traffic control systems, delineators, signs, and flaggers conforming to the current California Manual of Uniform Traffic Control Devices.

Groundwater Dewatering

If needed, temporary groundwater dewatering will be conducted to provide a dry work area. Dewatering will involve pumping water out of a trench or excavation. Groundwater will typically be pumped to Baker tanks (or other similar type of settling tank) or into a dewatering bag. Following the settling process provided by a tank or filter, the water will be used for dust control and compaction. Discharge water from Baker tanks would not be discharged into wetlands or any water bodies.

Site Restoration and Demobilization

Following construction, the contractor will demobilize and remove equipment, supplies, and construction wastes. The disturbed areas along the Project alignment will be restored to pre-construction conditions or stabilized with a combination of grass seed (broadcast or hydroseed), straw mulch, rolled erosion control fabric, rock, and other plantings/vegetation.

2.0 – Study Methods

2.1 - Regulatory Requirements

Federal Regulations

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS), which has jurisdiction over federally listed (i.e., threatened and endangered) plants, wildlife, and resident fish, and the National Marine Fisheries Service (NMFS), which has jurisdiction over anadromous fish and marine fish and mammals, implement the Federal Endangered Species Act (FESA). Section 7 of the FESA mandates that all federal agencies consult with the USFWS and NMFS to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. Federal agencies are required to consult with the USFWS and NMFS if they determine that a Project "may affect" a listed species. The FESA prohibits the "take" of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

Clean Water Act

The *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (USACE and USEPA 2007) indicates that the USACE and USEPA will assert jurisdiction over the following categories of water bodies: Traditionally Navigable Water (TNWs); all wetlands adjacent to TNWs; non-navigable tributaries to TNWs that are relatively permanent water (RPWs); and wetlands that directly abut such tributaries. In addition, the USACE and USEPA will assert jurisdiction over every water body that is not a RPW if the water body is determined to have a significant nexus with a TNW. These types of water bodies include: non-navigable tributaries that do not typically flow year-round or have continuous flow at least seasonally; wetlands adjacent to such tributaries; and wetlands that are adjacent to but do not directly abut relatively permanent, non-navigable tributaries. A significant nexus exists if the tributary, in combination with all its adjacent wetlands, has more than a speculative or in-substantial effect on the chemical, physical, and/or biological integrity of the TNW (USACE and USEPA 2007). To define a wetland, the USACE requires that vegetation, soil, and hydrology contain wetland attributes. The wetland delineation for this Project used USACE criteria from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (USACE 2010).

Section 401 of the CWA requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S., must obtain a state certification that the discharge complies with other provisions of CWA. The Regional Water Quality Boards (RWQCB) administer the certification program in California.

The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC §§ 703-708, 710-712) protects migratory bird species through the implementation of various treaties and conventions

between the US and Canada, Japan, Mexico, and the former Soviet Union. A migratory bird is any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle (MBTA 1918, as amended). There are currently 1,026 species included on the list of migratory birds that are protected under the MBTA (U.S. Department of the Interior [USDOI] 2013). The USFWS is responsible for administering the MBTA (USFWS 2017).

The MBTA makes it unlawful to take affirmative and purposeful actions to "pursue; hunt; take; capture; kill; attempt to take, capture, or kill; possess; offer for sale; sell; offer to barter; barter; offer to purchase; purchase; deliver for shipment; ship; export; import; cause to be shipped, exported, or imported; deliver for transportation; transport or cause to be transported; carry or cause to be carried; or receive for shipment, transportation, carriage, or export; any migratory bird, any part, nest, or egg of any such bird; or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof" (16 USC § 703 (a)). Based on the USDOI December 22, 2017 memorandum (M-37050), the MBTA does not prohibit an "incidental take" or accidental actions that result in the take or killing of migratory birds, their nests, or their eggs (USDOI 2017). In accordance with the USDOI memorandum, the MBTA is limited to affirmative and purposeful actions, such as hunting or poaching, that reduce migratory birds, their nests, and their eggs, by killing or capturing, to human control.

In the USDOI April 11, 2018 memorandum, USDOI further clarified the MBTA's prohibitions on take apply when the purpose of an action is to take migratory birds, their eggs, or their nests. Conversely, the take of birds, eggs, or nests occurring as the result of an activity, the purpose of which is not to take birds, eggs or nests, is not prohibited by the MBTA (USDOI 2018). Therefore, if the purpose of an activity (i.e., pipeline and facility construction) is not to take migratory birds, their eggs, or their nests, then any take resulting from the activity would be considered incidental, and such activity would not be a violation of the MBTA.

Bald and Golden Eagle Protection Act

The BGEPA of 1940 (16 USC §§ 668-668d, 54 Stat. 250 and as amended) protects the bald eagle and golden eagle and is administered by the USFWS (16 USC §§ 1801-1884 and 668-668c). The BGEPA makes it unlawful to, without a permit, "take, posses, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import… any bald eagle… or any golden eagle, alive or dead, or any part, nest, or egg thereof" (16 USC § 668(a)). "Take" is defined as: "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, or molest or disturb." "Disturb" is defined as: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Executive Order 11990 – Protection of Wetlands

Established a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. The U. S. Department of Transportation (DOT) promulgated DOT Order 5660.1A in 1978 to comply with this directive. On federally funded Projects, impacts on wetlands must be identified. Alternatives that avoid wetlands must be

considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included.

This must be documented in a specific Wetlands Only Practicable Alternative Finding. Additional requirement is to provide early public involvement in Projects affecting wetlands. FHWA provides technical assistance (Technical Advisory 6640.8A) and reviews environmental documents for compliance.

Executive Order 13112 – Invasive Species

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State’s invasive species list, maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a proposed Project.

Under the E.O., federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act of 1976 was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

State Regulations

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA prohibits the “take” of State endangered and threatened species; however, habitat destruction is not included in the State’s definition of take. Section 2090 of the CESA requires State agencies to comply with endangered species protection and recovery and to promote conservation of these species. The California Department of Fish and Wildlife (CDFW) administers the CESA and, with the exception of “Fully Protected Species,” authorizes take through Section 2080.1 agreements (also known as a Consistency Determination) for take of species that are both federal- and State-listed, and Section 2081 for take of a State-only listed species.

State Listed Special Status Plant Species

Special status plant species under State jurisdiction include those listed as endangered, threatened, or as candidate species by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA). Plant species on California Native Plant Society's (CNPS) California Rare Plant Ranking (CRPR) Lists 1A, 1B 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 do not have formal protection under CEQA. 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 (CDFW 2018a). A Project is required to have a "Scientific, Educational, or Management Permit" from CDFW for activities that would result in "take," possession, import, or export of state-listed plant species including research, seed banking, reintroduction efforts, habitat restoration, and other activities relating to any plant designated SE (State endangered), ST (State threatened), SR (State rare), or SC (State candidate for listing).

California Coastal Act and Local Coastal Programs

The California Coastal Commission (CCC) through the Coastal Act, and the City of Arcata and the County of Humboldt through their Local Coastal Programs are the jurisdictional agencies that exert authority in identifying and protecting ESHA for Projects. Section 30107.5 of the Coastal Act defines ESHA as: "*Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."*

California Fish and Game Code (FCG) - Birds of Prey and Native Nesting Birds

Section 3503 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.

California 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.

2.2 - Studies Required

Literature Search

Prior to field surveys, a scoping list of CRPR plant species and habitats with recorded occurrences in the Project vicinity was compiled by consulting the Arcata South quad *California Natural Diversity Database* (CNDDB)[CDFW 2018], the CNPS *Inventory of Rare and Endangered Vascular Plants* (CNPS 2018), the list of Federally listed plant species maintained by the U.S. Fish and Wildlife Service (USFWS 2018), and the NMFS Species List.

The scoping list includes special-status plants that occur in habitat similar to the Project Area with documented occurrences on the Arcata South USGS quadrangle or adjacent quadrangles. CDFW and CNPS recommend the assessment area be a minimum of nine USGS quadrangles with the survey area located in the central quad. The scoping list also contains other taxa that may occur in the Project Area whose habitat is suitable if the Project is within or near the known range of the species.

Field Reviews

The assessment area was defined as the nine USGS 7.5' minute quadrangles centered around the Arcata South quadrangle (Tyee City, Arcata North, Blue Lake, Eureka, Korbel, Cannibal Island, Fields Landing, and McWhinney Creek USGS 7.5' quadrangles). The queries yielded 55 sensitive species previously documented in the assessment area (see Table 1 of the *Draft Special Status Plant Survey and ESHA Evaluation*, included in Appendix C of this document). Due to the highly altered condition of the potential habitat contained within the BSA none of the plant species were thought to have a high probability of occurring within the study area. Within the assessment area, three sensitive plant communities are documented according to the CNDDB (ibid).

Vegetation assessment or screening for ESHA occurring within the BSA began with research to determine what areas might be considered ESHA that may occur within the BSA. No comprehensive list of ESHA for the state, Humboldt County, or the City of Arcata exists. However, the CCC, County of Humboldt, and City of Arcata rely on the *Hierarchical List of Natural Communities* developed by the California Department of Fish and Wildlife (CDFG 2010) for guidance on what constitutes ESHA. The Hierarchical list of Natural Communities coincides with the classification system presented in *A Manual of California Vegetation Second Edition* (Sawyer et al. 2009) which defines vegetation communities based on a system of alliances. Natural communities are further broken down to association level for vegetation types affiliated with ecological sections in California. The Hierarchical list of Natural Communities also identifies Natural Communities as "high priority" based on global or state rarity rankings. CDFW tracks data on Natural Communities through the California Natural Diversity Database (CDFW 2018a). Thus, the initial analysis of whether ESHA might occur within the APE began with a review of CNDDB for the Arcata South USGS 7.5' quadrangles and eight adjacent quadrangles, as well as a review of community descriptions of potential Natural Communities as defined in *A Manual of California Vegetation Second Edition* (Sawyer et al. 2009).

The vegetation groupings discussed in this report are Alliances based on dominant characteristic plants whose presence was constant within the observed groupings. *A Manual of California Vegetation Second Edition* defines alliance as "A classification unit of vegetation, containing one or more associations and defined by one or more diagnostic

species often of high cover, in the uppermost layer or the layers with the highest canopy cover" (Sawyer et al. 2009). The alliances described in *A Manual of California Vegetation* are the California expression of the National Vegetation Classification (CDFW 2017). The rankings for these communities are defined according to the NatureServe's Heritage Program methodology defined for Natural Community Conservation Ranks and outlined in *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009).

Biological Study Area

The Biological Study Area (Figure 2 in Appendix A) covers the entire extent of the proposed impact area plus a buffer zone of 5-10 feet around the perimeter. Though the impact area is proposed to end at the northern intersection of Old Arcata Road with Bayside Road, the BSA was extended approximately 600 feet further north to the roundabout at Buttermilk Lane to accommodate any potential design changes. No design changes are anticipated for this Project.

Survey Methods

The entirety of the following text is extracted from the *DRAFT Special Status Plant Survey and ESHA Evaluation* (GHD 2018b; included in Appendix B of this document) and the *Wetland Delineation Report* (GHD 2019a; included in Appendix C of this document).

The wetland delineation was conducted by a GHD botanist and soil scientist. The wetlands occurring within the road median, southwest of Old Arcata Road, on the northern side of the BSA, were also reviewed by a GHD senior Certified Professional Wetland and Certified Professional Soil Scientist. To define a wetland, the USACE requires that all three parameters (vegetation, soil, and hydrology) show wetland attributes (USACE 1987; USACE 2010). The City of Arcata requires that only two parameters are present in order to define a wetland. The California Coastal Commission requires only one parameter to be present in order to define the site as a wetland (14 CCR 13577). The wetland delineation used USACE criteria from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (USACE 2010). The current standard forms provided by the USACE (2010) were used for botany/soils/hydrology data collection.

Vegetation and soil data were collected at transects across the upland/wetland boundary with two plots (upland/wetland) per transect. The naming convention used on data sheets to designate upland or wetland plots associated with a transect was –U or –W, respectively. The wetland/upland boundary was recorded with a GPS device, individual wetland and upland plots were not. The distance to the wetland/upland boundary from the individual wetland and upland plots was recorded on each respective datasheet.

Intermediate GPS points were collected without the collection of data (soils, vegetation, or hydrology) as appropriate, and are shown without labels on the figures. In addition to the paired transect plots, one wetland test pit and one upland test pit were described that were not part of paired transects. These were labeled "WTP7" or "UTP8" respectively. In the case of the wetland test pit "WTP7", a paired upland test pit was not dug due to the presence of underground utilities. The upland test pit "UTP8" was completed to confirm the presence of 1-parameter wetland based on vegetation, and the lack of soil and hydrology indicators.

During the delineation mapping, each section of wetland was designated with a number e.g. “W1”. Wetland transects were labeled with a respective wetland number. Some wetland sections were mapped from intermediate points only, with no transects completed for these sections. For this reason, two wetland identification numbers are missing from the sequence of the transect datasheets (3 and 4). In addition, GHD revisited the road median on the northeast side of the BSA, which is why it contains non-sequential transects.

Field mapping of 1-parameter and 3-parameter wetlands was completed with a GeoPro 6H global positioning system (GPS) receiver with sub-meter accuracy, connected to a Motion F5v Tablet running ArcPad geographic information system (GIS) software on August 28 and August 29, 2018. Field mapping on September 20, 2018 was completed with a Trimble GeoExplorer GPS unit with sub-meter accuracy running ArcPad (GIS) software with a Trimble Tornado antenna. Data was post-processed using GPS Pathfinder office which referenced UNAVCO base stations. The points were then connected using ArcGIS for map preparation.

Vegetation data collection consisted of listing the dominant species in the herbaceous, shrub, and tree layer within a standard sized plot depending on layer. The species listed for each plot were classified as to whether or not they were wetland or upland indicators, using the standard reference for plant wetlands indicators: *State of California 2016 Wetland Plant List* (Lichvar et al. 2016). Plants were classified based on the probability that they would be found in wetlands (USACE 1987), ranging from Obligate (almost always in wetlands) [OBL], Facultative/wet (67% to 99% in wetlands) [FACW], Facultative (34% to 66% in wetlands) [FAC], Facultative/up (1% to 33% in wetlands) [FACU], or Uplands (less than 1% in wetlands) [UP]. Plants not listed in the manual were considered to be in the upland category (Lichvar et al. 2016). Standard procedures for documenting hydrophytic vegetation indicators were used per the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual* (USACE 2010).

The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual (*USACE 2010) procedures were combined with the Natural Resources Conservation Service’s (NRCS) definition of hydric soils presented in Field Indicators of Hydric Soils in the United States (USDA/NRCS 2016).

Soil pits were dug to an approximate depth of 16 inches. Data on soil color, texture and redoximorphic features were collected. Any observed redoximorphic features (iron concentrations) were noted along with their percentage within the soil matrix, and care was taken to distinguish chromas of 1 and 2 indicative of an iron-depleted soil within 12 inches of the soil surface (USACE 2010; USDA/NRCS 2016).

Colors were described for the entire depth of the test pit and colors were determined on moist natural soil aggregate (ped) surfaces, which had not been crushed, using the Munsell Color Chart (COLOR, M. 2000). Soils with low chromas were verified as being hydric or upland with Field Indicators of Hydric Soils in the United States (Version 8.0, 2016).

The delineation was performed in late August and September, towards the end of the dry season. Although some standing water was observed in a few sections of roadside ditch, near the BSA and also outside of the BSA on the northeast side of Old Arcata Road, standing water was not present in wetland test pits which were dug closer to the wetland

boundary. In general, two secondary indicators were identified to meet the wetland hydrology parameter per the USACE criteria.

Surveys to determine the presence of special status plant species (listed as rare, threatened, endangered, or candidate under the State or Federal Endangered Species Acts, CNPS, or species of local importance) were timed to coordinate with the blooming period for the majority of the species thought to possibly occur within the Project Area. After a review of the scoping list it was determined that two surveys, an early season survey and a late season survey, would be necessary to capture the blooming period for the majority of target species (species thought to have some potential to occur within the Project Area).

The surveys were floristic in nature following *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* by the California Natural Resource Agency (CDFW 2018c) and *General Rare Plant Survey Guidelines by the Endangered Species Recovery Program* (USFWS 2002). An intuitively controlled survey was conducted that sampled and identified potential habitat(s). Plants were identified to the lowest taxonomic level (genus or species) necessary for rare plant identification. Nomenclature follows *The Jepson Manual* (Baldwin et al 2012). Surveys were conducted by walking the site looking for the presence of target species and habitats identified on the scoping list, as well as presence of any other incidental sensitive-listed plant species. In total, approximately six field person hours were spent surveying the BSA specifically for special status plants over both the early season and late season survey dates.

Assessment of potential ESHA within the BSA was conducted by using the resources outlined above including identification of Sensitive community alliances as defined by the *Hierarchical list of Natural Communities* (CDFW 2018d) and by *A Manual of California Vegetation Second Edition* (Sawyer et al. 2009). Mapping of individual trees during the assessment of potential ESHA was completed with a GeoPro 6H global positioning system (GPS) receiver connected to a Motion F5v Tablet running ArcPad geographic information system (GIS) software.

2.3 - Personnel and Survey Dates

The role of lead biologist was tasked to GHD botanist Amy Livingston, who was present for all field surveys. She was further assisted by GHD environmental scientist Matt Tolley. Survey dates and tasks are summarized in Table 1. Brief biographical summaries of both personnel follow thereafter.

Table 1: Field Survey Summary

Survey Task	Survey Dates	Personnel
Wetland Delineation Survey	08/28/2018 08/29/2018 09/20/2018	A. Livingston, M. Tolley A. Livingston, M. Tolley A. Livingston, M. Tolley
Special Status Plant Survey	06/18/2018 07/31/2018	A. Livingston A. Livingston
Environmentally Sensitive Habitat Area Survey	08/31/2018 09/20/2018	A. Livingston A. Livingston

Amy Livingston
M.S. Natural Resources: Forest, Watershed, and Wildland Sciences, Humboldt State University, 2014

Amy Livingston has over twelve years of experience in the fields of botany and plant ecology in northern California. Amy has completed several wetland delineations in northern California including the wetland delineation for the Humboldt Bay Trail South for the County of Humboldt, the Redwood National and State Park Visitor Center and Restoration Project in Orick for Save the Redwoods League, and the Covelo SR 162 Corridor Multi-Purpose Trail Project for the Mendocino Council of Governments. Amy has received wetland delineation training through the National Wetlands Training Institute and is also a certified California Rapid Assessment Method (CRAM) Practitioner for Wetland Evaluation.

Matt Tolley
B.A. Environmental Science, Humboldt State University, 2004

Matt Tolley has over 13 years of experience in hazardous materials characterization, assessment, and reporting; air quality assessment and reporting; biological monitoring; and operations and maintenance (O&M). Matt has prepared U.S. Army Corps of Engineers, Regional Water Control Board and Lake and Streambed Alteration permit applications. Mr. Tolley has assisted with wetland delineations throughout coastal northern California, working with the Mendocino Council of Governments, City of Arcata, Fortuna Fire Department and private developers. In addition, Matt has expertise in piezometer design, equipment installation, monitoring and soil data logging. He also has completed percolation and infiltration testing in a variety of soil types. This experience has involved conducting over 230 energy site assessment investigations and Phase I ESAs throughout northern California, for such clients as the County of Humboldt, Eureka City Schools, Humboldt State University, the California Department of General Services, UC Davis, the Border Coast Regional Airport Authority, and the Humboldt Bay Harbor Recreation and Conservation District, in which he sometimes operated as Project manager.

2.4 - Agency Coordination and Professional Contacts

U.S. ARMY CORP OF ENGINEERS

In follow up to the Preliminary Jurisdictional Determination (PJD) issued on April 2, 2019, GHD coordinated with Kasey Sirkin of the USACE regarding a small potential wetland area (0.0367 acres) adjacent to the north side of Jacoby Creek Road. On July 8, 2019, Ms. Sirkin confirmed that the compensatory mitigation would not be required because the area of fill was under 0.10 acres (USACE discretionary threshold) of poor-quality wetlands. Ms. Sirkin further noted that a Section 404 permit application package would still be required.

NORTH COAST WATER QUALITY CONTROL BOARD

On July 9, 2019, GHD coordinated with Brandon Stevens at the North Coast Regional Water Quality Control Board regarding the potential wetland area adjacent to the north side of Jacoby Creek Road. Mr. Stevens indicated his discretionary threshold for requiring wetland mitigation is 10 lineal feet. While a Mitigation, Monitoring, and Reporting Plan (MMRP) would be required if wetlands were to be impacted, there was discretion for the

plan to be streamlined given the small area of wetland impacts and the poor quality of existing wetland resources. Additionally, it may be possible to reduce the duration of the monitoring period from five years to one year.

2.5 - Limitations That May Influence Results

Focused or presence/absence protocol-level surveys were not conducted for special-status wildlife species potentially occurring in the Project vicinity, because it was determined while preparing the PES with DOT approval that a Biological Assessment was not required. Focused surveys or surveys during particular seasons were not deemed necessary for special-status species given the particular species involved and Project-specific conditions. For species potentially occurring in the Project Area, assessment of habitat conditions and occurrence records in the region are adequate to determine that the species are absent. Information obtained during focused surveys or at a time of year more conducive for detecting the species would not have altered the determinations regarding potential presence or absence of these species. This methodology is consistent with the generally accepted standards for the preparation of an NES in that it may recommend further focused surveys to determine presence/absence of species with the potential to occur in the Project Area.

3.0 – Results: Environmental Setting

3.1 - Description of the Existing Biological and Physical Conditions

3.1.1 - Study Area

The BSA for the Old Arcata Road Improvement Project is located in the USGS Arcata South 7.5-minute quadrangle. It includes Old Arcata Road and adjacent roadsides through the community of Bayside, between the intersections with Buttermilk Road and Jacoby Creek Road, as well as short sections of adjacent roads and roadsides (Figure 2 in Appendix A). The BSA covers the entire footprint of the proposed improvements (Figure 3 in Appendix A) and extends an additional 600 feet north of the end of the proposed improvements, plus a buffer zone of approximately 5 to 10 feet around the entire Project. The BSA is primarily within the Coastal Zone, and primarily within jurisdiction of the City of Arcata, and within the appeal zone of the California Coastal Commission. A section of the BSA (a portion of the intersection with Jacoby Creek Road) is located in Humboldt County primary jurisdiction, within the appeal zone of the Coastal Commission.

3.1.2 - Physical Conditions

The BSA, running approximately north by northwest from Bayside to Arcata, is located on the median between two distinct geographic regions. West of the site are the Bayside Bottoms mud flats and Gannon Slough, low profile wetland features supporting drainage to Humboldt Bay and possessing numerous standing waters. East of the site is Fickle Hill, characterized by low elevation foothills drained by numerous creeks. The most prominent creeks near the site are Beith Creek (approximately 50 feet north of the BSA), Jacoby Creek (located south and west of the BSA), and Grotzman Creek (located north and west of the BSA). No jurisdictional waters occur within the BSA. The elevation within the BSA ranges from approximately 20 to 55 feet above mean sea level. Annual precipitation averages 41-53 inches and mean annual temperature ranges from 52-55 degrees Fahrenheit (NRCS 2018).

The BSA lies entirely on the Hookton-Tablebluff soils complex, which is comprised of largely undifferentiated alluvial and aeolian sediment forming loams and silty clay-loams in the top 5 feet of soil. Specific groundwater depths are currently unknown at the Project location, but NRCS estimates range from 10 to 40 inches below ground surface. Topography slopes from 2 to 9 percent grade. The soils range from poorly to moderately well-drained and possess a moderately low water transmissivity value (0.20 – 0.60 inches per hour). (NRCS 2018). Field surveys performed by GHD also indicated the presence of naturally occurring gravels in varying frequencies, and larger quantities of gravel placed by humans in drainage ditches (GHD 2019a).

3.1.3 - Biological Conditions in the Biological Study Area

The Project Area is within the Redwood – Douglas Fir vegetation community (ICE 1997) with Old Arcata Road the dominant feature throughout the BSA. The botanical survey conducted by GHD identified individual redwood trees adjacent to Old Arcata Road but determined they did not constitute a forest community and are not considered Environmentally Sensitive Habitat Areas (GHD 2018b).

3.2 - Regional Species and Habitats and Natural Communities of Concern

The list of federal and state-listed threatened and endangered species having the potential to occur in the vicinity of the Project was developed via review of online and hard copy resources, agency database requests, and agency consultation. The USFWS *Information for Planning and Consultation* (IPaC) website and the Arcata South quad CNDDB [CDFW 2018] was consulted for a list of federal and state-listed species and critical habitat that might be present within the proposed Project and the BSA (USFWS 2019). Table 2 (below) summarizes the federal and state-listed species identified from these source reviews and a determination regarding their presence or absence in the specific Project Area.

Table 2: Federal and State-Listed Species and Their Habitats Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status (USFWS, CA, CDFW)	General Habitat Description	Habitat Present/ Absent	Rationale
MAMMALS					
Fisher	*Pekania pennanti*	USFWS Proposed Threatened, CA Threatened, CDFW Species of Special Concern	Late-successional coniferous or mixed forests. Key habitat components include relatively large diameter trees, high canopy closure, large trees (hardwood and conifer) with cavities, and large down wood.	Absent	Habitat is absent from the BSA.
Sonoma Tree Vole	*Arborimus pomo*	CDFW Species of Special Concern	Nests high in the canopy in wet, old-growth forests.	Absent	Suitable habitat is absent from BSA.
Townsend's big-eared bat	*Corynorhinus townsendii*	CDFW Species of Special Concern	Uses caves, mines, and isolated buildings (e.g. barns) for day and night roosting, maternity roosting, and hibernacula. Occasionally uses hollow trees and bridges for day or night roosting.	Absent	Habitat is generally absent in the BSA; however, habitat is adjacent to the BSA and a potential to occur does exist.
BIRDS					
Marbled Murrelet	*Brachyramphus marmoratus*	Threatened	Known to nest high in trees in old-growth forest several miles inland from coast.	Absent	Habitat is absent from the BSA.

Table 2: Federal and State-Listed Species and Their Habitats Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status (USFWS, CA, CDFW)	General Habitat Description	Habitat Present/ Absent	Rationale
Northern Spotted Owl	*Strix occidentalis caurina*	Threatened	Inhabit older forested habitats required for nesting, roosting, and foraging. Specifically require multi-layered, multi-species canopy with moderate to high canopy closure.	Absent	Habitat is absent from the BSA.
Western Snowy Plover	*Charadrius nivosus nivosus*	Threatened	Breeds on coastal beaches. Generally breeding occurs above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries.	Absent	Habitat is absent from the BSA.
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened	Breeds mostly in dense deciduous stands, including forest edges, tall thickets, dense second growth, overgrown orchards, and scrubby oak woods. Often found in willow groves around marshes.	Absent	Habitat is absent from the BSA.
White-tailed Kite	*Elanus leucurus*	CDFW Fully Protected	Common in savannas, open woodlands, marshes, desert grasslands, partially cleared lands, and cultivated fields.	Absent	Habitat is generally absent in the BSA; however, habitat is adjacent to the BSA and a potential to occur does exist.
Mountain Plover	*Charadrius montanus*	CDFW Species of Special Concern	Breeds on open plains at moderate elevations. Winters in short-grass plains and fields, plowed fields, and sandy deserts. Usually not found near bodies of water or even wet soil.	Absent	Habitat is absent from the BSA.
American Peregrine Falcon	*Falco peregrinus anatum*	CDFW Fully Protected	Breeds in open landscapes with cliffs (or skyscrapers) for nest sites.	Absent	Habitat is absent from the BSA.

Table 2: Federal and State-Listed Species and Their Habitats Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status (USFWS, CA, CDFW)	General Habitat Description	Habitat Present/ Absent	Rationale
Bryant's Savannah Sparrow	*Passerculus sandwichensis alaudinus*	CDFW Species of Special Concern	Inhabit grasslands with few trees, including meadows, pastures, grassy roadsides, sedge wetlands, and cultivated fields planted with cover crops like alfalfa. Near oceans, they also inhabit tidal saltmarshes and estuaries.	Absent	Suitable habitat is absent from the BSA.
California Brown Pelican	*Pelecanus occidentalis californicus*	CDFW Fully Protected	Nest in colonies on offshore islands free from predators. Roost communally in areas that are near adequate food supplies, have a physical barrier from predators, and provide protection from wind or high surf.	Absent	Habitat is absent from the BSA.
Yellow Rail	*Coturnicops noveboracensis*	CDFW Species of Special Concern	Breeding birds typically inhabit fresh and brackish-water marshes, preferring the higher (drier) margins.	Absent	Habitat is absent from the BSA and the Project Area is outside of the Yellow Rail's known range.
AMPHIBIANS					
Pacific Tailed Frog	*Ascaphus truei*	CDFW Species of Special Concern	Inhabits cold, fast-moving streams with cobblestone bottoms.	Absent	Habitat is absent from the BSA.
Foothill Yellow-legged frog	*Rana boylii*	CA Threatened, CDFW Species of Special Concern	Typically inhabits rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands.	Absent	Habitat is absent from the BSA.
Northern Red-legged Frog	*Rana aurora*	CDFW Species of Special Concern	Typically found in woods adjacent to streams. Found in humid forests, woodlands, grasslands, and streamsides with plant cover. Breeding habitat is in permanent water sources (lakes, ponds, streams, etc.).	May be present	Habitat is generally absent in the BSA; however, habitat is adjacent to the BSA and a potential to occur does exist.

Table 2: Federal and State-Listed Species and Their Habitats Potentially Occurring or Known to Occur in the Project Area					
Common Name	**Scientific Name**	**Status (USFWS, CA, CDFW)**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
Southern Torrent Salamander	*Rhyacotriton variegatus*	CDFW Species of Special Concern	Found in shallow, cold, clear, well-shaded streams, waterfalls and seepages, particularly those running through talus and under rocks all year, in mature old-growth forests.	Absent	Habitat is absent from the BSA.
REPTILES					
Western Pond Turtle	*Emys marmorata*	CDFW Species of Special Concern	Inhabits calm and quiet ponds, marshes, and pools.	Absent	Habitat is absent from the BSA.
FISH					
Tidewater Goby	*Eucyclogobius newberryi*	USFWS Endangered, CDFW Species of Special Concern	Inhabits lagoons formed by streams running into the sea.	Absent	Habitat is absent from the BSA.
Green Sturgeon	*Acipenser medirostris*	USFWS Threatened, CDFW Species of Special Concern	Found in riverine, estuarine, and marine habitats along the west coast of North America, spending substantial portions of their lives in marine waters.	Absent	Habitat is absent from the BSA.
Longfin Smelt	*Spirinchus thaleichthys*	USFWS Candidate, CA Threatened	Found in bays, estuaries, and nearshore coastal areas, and migrate into freshwater rivers to spawn.	Absent	Habitat is absent from the BSA.
Eulachon	*Thaleichthys pacificus*	USFWS Threatened	Found near the bottom of the continental shelf, usually at depths of 20-200m. Spawning occurs within tidal influence of river mouth.	Absent	Habitat is absent from the BSA.

Table 2: Federal and State-Listed Species and Their Habitats Potentially Occurring or Known to Occur in the Project Area

Common Name	Scientific Name	Status (USFWS, CA, CDFW)	General Habitat Description	Habitat Present/ Absent	Rationale
Coho Salmon	*Oncorhynchus kisutch*	USFWS Threatened, CA Threatened	Spawning occurs in small streams with stable gravel substrates. The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean.	Absent	Habitat is absent from the BSA.
Steelhead Trout	*Oncorhynchus mykiss irideus*	USFWS Threatened	Spawn in fast-flowing, gravel-bottomed, well-oxygenated rivers and streams.	Absent	Habitat is absent from the BSA.
Chinook Salmon	*Oncorhynchus tshawytscha*	USFWS Threatened	Juveniles may spend 3 months to 2 years in freshwater before migrating to estuarine areas and then into the ocean to feed and mature. They prefer streams that are deeper and larger than those used by other Pacific salmon species.	Absent	Habitat is absent from the BSA.
Coast Cutthroat Trout	*Oncorhynchus clarkii clarkii*	CDFW Species of Special Concern	Inhabit a large range along the Pacific coast. They prefer estuaries, lagoons, and small, low-gradient coastal streams.	Absent	Habitat is absent from the BSA.
Pacific Lamprey	*Entosphenus tridentatus*	CDFW Species of Special Concern	Typically found in stream and river reaches that have relatively stable flow conditions. Spawning occurs in medium-sized rivers and smaller tributary streams.	Absent	Habitat is absent from the BSA.
PLANTS					
Western Lily	*Lilium occidentale*	USFWS Endangered, CA Endangered	Grows at the edges of sphagnum bogs and in forest or thicket openings along the margins of ephemeral ponds and small channels. It also grows in coastal prairie and scrub near the ocean where fog is common.	Absent	Habitat is absent from the BSA.

4.0 – Results: Biological Resources, Discussion of Impacts and Mitigation

4.1 - Habitats and Natural Communities of Special Concern

4.1.1 – Discussion of Special Concern Habitats and Natural Communities

No special concern habitats or natural communities exist within the BSA.

4.1.2 - Survey Results

Wetlands

The BSA consists of two types of presumed USACE jurisdictional wetlands that were classified using Cowardin nomenclature from *Classification of Wetlands and Deepwater Habitats of the United States* (Federal Geographic Data Committee 2013), Palustrine Emergent Persistent Wetlands and Palustrine Broad-leaved Deciduous Scrub-Shrub Wetlands. The BSA also contains 1-parameter wetlands meeting Coastal Commission requirements based only on wetland (FAC or wetter) vegetation. These wetlands were mapped based on dominant native vegetation as 1-Parameter Willow Series. The 1-Parameter Willow Series was mapped to the willow canopy dripline. Areas where the canopy extends over pavement were also mapped. No 2-parameter wetlands were identified. Figures 2:1-5 of the *Wetland Delineation Report* (Appendix C) shows the results of the wetland delineation. In Summary, 0.158 acres of 3-parameter Palustrine Emergent Persistent Wetlands, 0.239 acres of 3-parameter Palustrine Broad-leaved Deciduous Scrub-Shrub Wetlands, and 0.082 acres of 1-Parameter Willow Series were identified within the BSA (not including the area where the willow canopy dripline extended over pavement).

The Palustrine Emergent Persistent Wetland and the Palustrine Scrub-Shrub, Broad leaved Deciduous Wetlands occurred primarily within roadside ditches along the northeast side of Old Arcata Road. The Palustrine Emergent Persistent Wetland consisted primarily of an herbaceous layer and the Palustrine Scrub-Shrub, Broad leaved Deciduous Wetlands consisted of tree, shrub, and herbaceous vegetation layers. Willow species (*Salix* spp.) were the dominant trees in the shrub-scrub wetlands often occurring with Himalayan blackberry (*Rubus armeniacus*) and California blackberry (*Rubus ursinus*) in the shrub layer. Hydrophytic vegetation was dominant within all wetland areas.

The majority of upland plots also contained hydrophytic vegetation, dominated by non-native, invasive grass species such as tall fescue (*Festuca arundinacea* synonym: *Schedonorus arundinaceus*), creeping bent (*Agrostis stolonifera*), and velvet grass (*Holcus lanatus*), all of which are rated as facultative species. It is likely that roadside mowing is favoring these invasive grass species. As defined by Lichvar (2016), facultative species have a 36% to 66% probability of occurring in wetlands, making these species statistically equally likely to occur in wetlands or uplands. Field inspections to determine the presence of hydric soil conditions and/or wetland hydrology can alleviate potential technical misinterpretation of facultative species. Considering that wetland hydrology and hydric soils were not present in the upland plots and given that these nonnative species are favored by disturbance and are located in the mowed roadside corridor, it has been determined these species are not growing as hydrophytes and are not 1-parameter wetlands.

Soils in the delineated wetlands were generally silt loam, silty clay loam, and silty clay in texture containing various amounts of gravel. An exception to this is the road median area on the north side of the BSA which is discussed separately. Wetland soils exhibited redoximorphic features typically found in hydric soils including low chromas with redoximorphic (iron concentrations) at or above 10 inches from the soil surface. Representative wetland (hydric) soils had matrix colors of 2.5YR 3/1, 2.5YR 4/1, 2.5Y 4/1, 2.5Y 2/1, with iron concentrations of 10YR 5/6 and 7.5Y 4/6. The hydric soil indicators observed included redox dark surface (F6) and depleted matrix (F3).

Representative upland soils were generally silty loam, silty clay loam, or silt clay. Representative upland soils had matrix colors of 2.5Y 3/3, 2.5Y 4/3. Upland soil colors were with either no redoximorphic features observed, or very small percentages of redox features observed and thus the soils did not meet field indicators for hydric soils.

The delineation was performed in late August and September of 2018 at the end of the dry season. No water was observed in the test pits. The most frequent secondary indicators of hydrology observed were geomorphic position and passing the FAC-neutral test.

The road median on the northern side of the BSA contained a drainage ditch that parallels Old Arcata Road with a smaller drainage ditch perpendicular to the longer one. Soils were disturbed and most likely human placed and contained a high percentage of gravel. The vegetation had recently been cut and the ground was covered with straw. Within this road median two, 3-Parameter Palustrine Emergent Wetlands were mapped, and one, 1-Parameter Willow Series wetland was mapped based on the dominance of hydrophytic vegetation.

4.1.3 - Project Impacts

The Project may impact approximately 0.04 acres (1,600 square feet) of wetlands adjacent to the north side of Jacoby Creek Road. If the area of Project impacts increases a result of final design adjustments, additional mitigation would be required.

4.1.4 - Avoidance and Minimization Efforts

Efforts will be taken to prevent the contamination of potential adjacent habitats by utilizing BMPs in the form of physical and administrative controls. Physical controls will include temporary BMPs such as straw waddles, sandbags, and silt screen to prevent infiltration by hazardous substances and debris into wetlands and stormwater drains. Administrative controls will include regular Stormwater Pollution Prevention Plan (SWPPP) inspections, vehicle maintenance, and Project scheduling (for example, vegetation clearing may occur during the non-bird nesting season, between August 16th and March 14th; and, work near wetlands will only occur during the dry season between May and October).

4.1.5 - Compensatory Mitigation

The Project may include onsite wetland establishment within the City's right-of-way between Old Arcata Road and Bayside Road. Approximately 0.04 acres (1,600 square feet) of wetland establishment is anticipated. Groundwater data will be obtained and used to inform wetland design grading depths to ensure wetland hydrology criteria are met. The criteria for meeting wetland hydrology as defined by the USACE is flooding or ponding, or

a water table within 12 inches of the soil surface for 14 or more consecutive days (USACE 2010). Wetlands will be established by excavating to a target elevation.

In follow up to the Preliminary Jurisdictional Determination (PJD) issued on April 2, 2019, GHD coordinated with Kasey Sirkin of the USACE regarding a small potential wetland area (0.04 acres) adjacent to the north side of Jacoby Creek Road. On July 8, 2019, Ms. Sirkin confirmed that the compensatory mitigation would not be required because the area of fill was under 0.10 acres (USACE discretionary threshold) of poor-quality wetlands. Ms. Sirkin further noted that a Section 404 permit application package would still be required. The RWQCB assumes jurisdiction for all wetlands greater than 10 lineal feet; it is anticipated compensatory mitigation will be required by the RWQCB for the 0.04 acres (1,600 square feet) of potential wetlands along Jacoby Creek Road.

4.1.6 - Cumulative Impacts

The Project may impact approximately 0.04 acres (1,600 square feet) of wetlands adjacent to the north side of Jacoby Creek Road.

4.2 - Special Status Plant Species

4.2.1 - Discussion of Special Status Plant Species

No special status plant species were identified within the BSA.

4.2.2 - Survey Results

On June 18 and July 31, 2018 the BSA was surveyed in an effort to identify if federal, state and/or CNPS listed plant species are present. No special status species were observed during the protocol level surveys in 2018. Vegetation mapping to screen for Environmentally Sensitive Habitat Areas (ESHA) occurred on August 31, 2018 and September 20, 2018. Within the assessment area, three sensitive plant communities have a documented potential to exist according to the CNDDB - upland Douglas-fir forest, northern coastal salt marsh, and northern foredune grassland (CDFW 2018a). None of these communities were observed within the BSA. Palustrine emergent persistent wetlands, palustrine broad-leaved deciduous scrub-shrub wetlands, and 1-parameter wetlands occur within the BSA. The 1-parameter wetlands meet the Coastal Commission requirements based on dominance of wetland (FAC or wetter) vegetation, in this case willows (*Salix* spp.). All wetlands occurring within the BSA are addressed in the attached *Wetland Delineation Report* (Appendix D).

No sensitive vegetation alliances were identified within the BSA based on CDFW's *Hierarchical List of Natural Communities* (CDFW 2018b). Some individual redwood trees (*Sequoia sempervirens*) occur within the BSA. On the northern end of the BSA near the Buttermilk Lane roundabout, there are a few young redwood trees that appear to have been planted. North of Jacoby Creek Elementary School, between a fence line and the sidewalk, there are two mature redwood trees and a small (<5-foot tall) sapling located between the two larger trees. The *Sequoia sempervirens* Forest Alliance has a Global listing of G3 and State Ranking of S3 (CDFW 2018b). None of the redwood trees within the BSA are connected to a forest and therefore they do not constitute a Forest Alliance. Redwood trees are not considered special-status plant species as individuals and are not considered ESHA. Figures showing the location of the redwood trees are provided in Figure 2:1-5 of the *Wetland Delineation Report* (Appendix D).

4.2.3 - Project Impacts

There are no potential Project impacts because no special status plant species were identified within the BSA.

4.2.4 - Avoidance and Minimization Efforts

While no special status plant species were identified within the BSA, an effort will be made to control invasive plant species through the means of regular inspections and the use of BMPs, as necessary (including straw waddles, dry brushing area, rumble grids, etc.). Inspections will be performed on all construction equipment when entering the Project for signs of plant debris from other locations and removed and contained for proper disposal. Straw waddles should be employed around the perimeter of the staging area and sandbags or other filtration utilized at stormwater drains to prevent migration of seeds from invasive species. Care will be taken to minimize the tracking of mud across the work site by using rumble grids where necessary to shake off excess debris. Regular SWPPP inspections will be conducted on all BMPs, which must be replaced if invasive species are identified growing from them. Additionally, soil and material stockpiles must be inspected for signs of invasive species.

4.2.5 - Compensatory Mitigation

The Project may include onsite wetland establishment within the City's right-of-way between Old Arcata Road and Bayside Road. Approximately 1,600 square feet of wetland establishment is anticipated. Groundwater data will be obtained and used to inform wetland design grading depths to ensure wetland hydrology criteria are met. The criteria for meeting wetland hydrology as defined by the USACE is flooding or ponding, or a water table within 12 inches of the soil surface for 14 or more consecutive days (USACE 2010). Wetlands will be established by excavating to a target elevation.

In follow up to the Preliminary Jurisdictional Determination (PJD) issued on April 2, 2019, GHD coordinated with Kasey Sirkin of the USACE regarding a small potential wetland area (0.04 acres) adjacent to the north side of Jacoby Creek Road. On July 8, 2019, Ms. Sirkin confirmed that the compensatory mitigation would not be required because the area of fill was under 0.10 acres (USACE discretionary threshold) of poor-quality wetlands. Ms. Sirkin further noted that a Section 404 permit application package would still be required.

4.2.6 – Cumulative Impacts

There will be no potential cumulative Project impacts because no special status plant species were identified within the BSA.

4.3 - Special Status Animal Species Occurrences

4.3.1 - Discussion of Special Status Animal Species

No special status animal species or their habitats were identified within the BSA.

4.3.2 - Survey Results

The USFWS *Information for Planning and Consultation* (IPaC) website was consulted for a list of federally-listed species and critical habitat that might be present within the

proposed Project and the BSA (USFWS 2019) (Table 2). Additionally, the CNDDB list of Federally and State-listed species was reviewed for species that may potentially occur in the area. Surveys indicated there were no special status species or their potential habitats within the BSA.

The Project Area contains habitat suitable for nesting migratory birds. Species with the potential to be affected by Project activities are those that nest in the vegetation and trees adjacent to Old Arcata Road.

4.3.3 - Project Impacts

Potential habitat exists for the Northern Red-legged Frog adjacent to the BSA. Therefore, there is a potential for impact to Northern Red-legged Frogs if they are present within the BSA during construction activities. Impacts to Northern Red-legged Frogs could potentially occur to egg masses or tadpoles within wetted areas, or to adults out of water, on land, post breeding. Impacts to egg masses or tadpoles are unlikely due to the limited amount of standing water. Potential direct effects to adults may include harassment, injury, and mortality due to equipment and vehicle traffic and construction-related ground disturbance in wetland areas. These direct effects could occur in freshwater areas located within the proposed BSA or in adjacent terrestrial habitat with herbaceous vegetation. The species may be indirectly affected if construction activities result in degradation of adjacent aquatic habitat and water quality due to erosion and sedimentation, accidental fuel leaks, and spills leaving the Project site.

Potential impacts to nesting birds may occur due to vegetation removal, ground disturbance, or construction noise if Project activities occur during migratory bird nesting season (March through August). Avoidance measures are recommended to minimize potential impacts to migratory bird nests.

4.3.4 - Avoidance and Minimization Measures

Although Northern Red-legged Frog breeding is not documented in the Project Area, measures for this species are included because individual frogs may disperse for considerable distances and could enter construction areas. The following mitigation measures are proposed to minimize potential impacts to northern red-legged frogs:

1. Within 24 hours prior to commencement of ground disturbance within 50 feet of suitable Northern Red-legged Frog habitat, a qualified wildlife biologist shall perform a pre-construction survey for the Northern Red-legged Frog within the Project Area and shall relocate any specimens that occur within the work -impact zone to nearby suitable habitat.

2. In the event that a Northern Red-legged Frog is observed in an active construction zone, the contractor shall halt construction activities in the area and the frog shall be moved to a safe location in similar habitat outside of the construction zone.

While no special status wildlife species were identified within the BSA based on a desktop evaluation, Project construction activities will avoid potential impacts to nearby wetlands and waters outside of the Project Area (Beith Creek, Bayside Bottoms, and Gannon Slough). The use of BMPs will be utilized where necessary to prevent potential runoff and silt migration generated by construction activity. These BMPs may include straw waddles, sandbags, and silt fence as passive controls. Regular SWPPP inspections will be conducted on BMPs and construction equipment. Spill response kits (for oil and hydraulic

spills, etc.) will be kept onsite and included in SWPPP inspections. All hazardous materials will be properly stored and labelled within the staging area and kept within secondary containment (flammable cabinet, plastic sheeting with berms, etc.).

Construction equipment and personal vehicles must be kept in good operating condition. If signs of persistent leaks are observed on vehicles during SWPPP inspections, the vehicle must be parked or staged over plastic sheeting until repairs can be completed. Administrative controls will include Project scheduling (for example, vegetation clearing may occur during the non-bird nesting season, between August 16th and March 14th; and, work near wetlands will only occur during the dry season between May and October).

Moreover, due to the high probability of precipitation occurring during the construction phase, an emphasis on controlling stormwater runoff must be addressed. Additional stormwater control measures must be considered to minimize impacts to adjacent wetlands, including such features as stormwater culverts, diversions, and the use of stockpile covers to actively contain stormwater runoff.

Measures shall be implemented to avoid or minimize the potential for Project-related impacts on migratory birds that have no other special-status.

Clearing of shrubs or other vegetation or ground disturbance shall be conducted, if possible, during the fall and/or winter months and outside of the avian nesting season (March 15th – August 15th) for Humboldt County. If vegetation removal or ground disturbance cannot be confined to work outside of the nesting season, a qualified ornithologist shall conduct pre-construction surveys within the vicinity of the Project Area, to check for nesting activity of native birds and to evaluate the site for presence of raptors and special-status bird species. The ornithologist shall conduct a minimum of one day pre-construction survey within the 7-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 breeding season, a qualified biologist shall conduct a supplemental avian pre-construction survey before Project work is reinitiated.

If active nests are detected within the construction footprint or within the construction buffer established by the Project biologist, 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 construction (disturbance) footprint, but within construction buffer, nest buffers will 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 California Department of Fish and Wildlife (CDFW). Buffer sizes will take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds.

If active nests are detected during the survey, the qualified ornithologist shall monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified ornithologist, disturb nesting activities (e.g., excessive noise), shall be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified ornithologist shall immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction

activities in the vicinity of the nest until fledging is confirmed, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors.

4.3.5 - Compensatory Mitigation

Compensatory mitigation is not required because no special status animal species were identified within the BSA.

4.3.6 - Cumulative Impacts

There will be no potential cumulative Project impacts because no special status animal species were identified within the BSA.

5.0 – Conclusions and Regulatory Determinations

5.1 - Federal Endangered Species Act Consultation Summary

No Section 7 Consultation was conducted in preparation for this Project. It was concluded that a Biological Assessment was not necessary, and no effects to Federally Listed Species. The list of Federally Listed Species that may potentially occur in the BSA was from the USFWS *Information for Planning and Consultation* (IPaC) website and included in Table 2.

5.2 - Essential Fish Habitat Consultation Summary

This consultation was not performed because no essential fish habitat occurs within the BSA.

5.3 - California Endangered Species Act Consultation Summary

Consultation with the California Department of Fish and Wildlife has not yet been conducted. Coordination may be required to review avoidance or minimization measures associated with the potential for Project-related impacts on migratory birds that have no other special-status.

5.4 - Wetlands and Other Waters Coordination Summary

A Wetland Delineation was submitted to USACE on January 29, 2019 with a request for a Preliminary Jurisdictional Determination (PJD). The USACE issued the PJD on April 2, 2019. No other consultation has occurred.

5.5 - Invasive Species

No survey of invasive species within the BSA was conducted in preparation for this Project. However, a number of invasive grass species were identified during the wetland delineation survey, including tall fescue (*Festuca arundinacea* synonym: *Schedonorus arundinaceus*), creeping bent (*Agrostis stolonifera*), and velvet grass (*Holcus lanatus*), all of which are rated as facultative species (GHD 2019a). As stated throughout Section 4.0, the use of BMPs will be implemented to prevent the spread of invasive species.

6.0 – References

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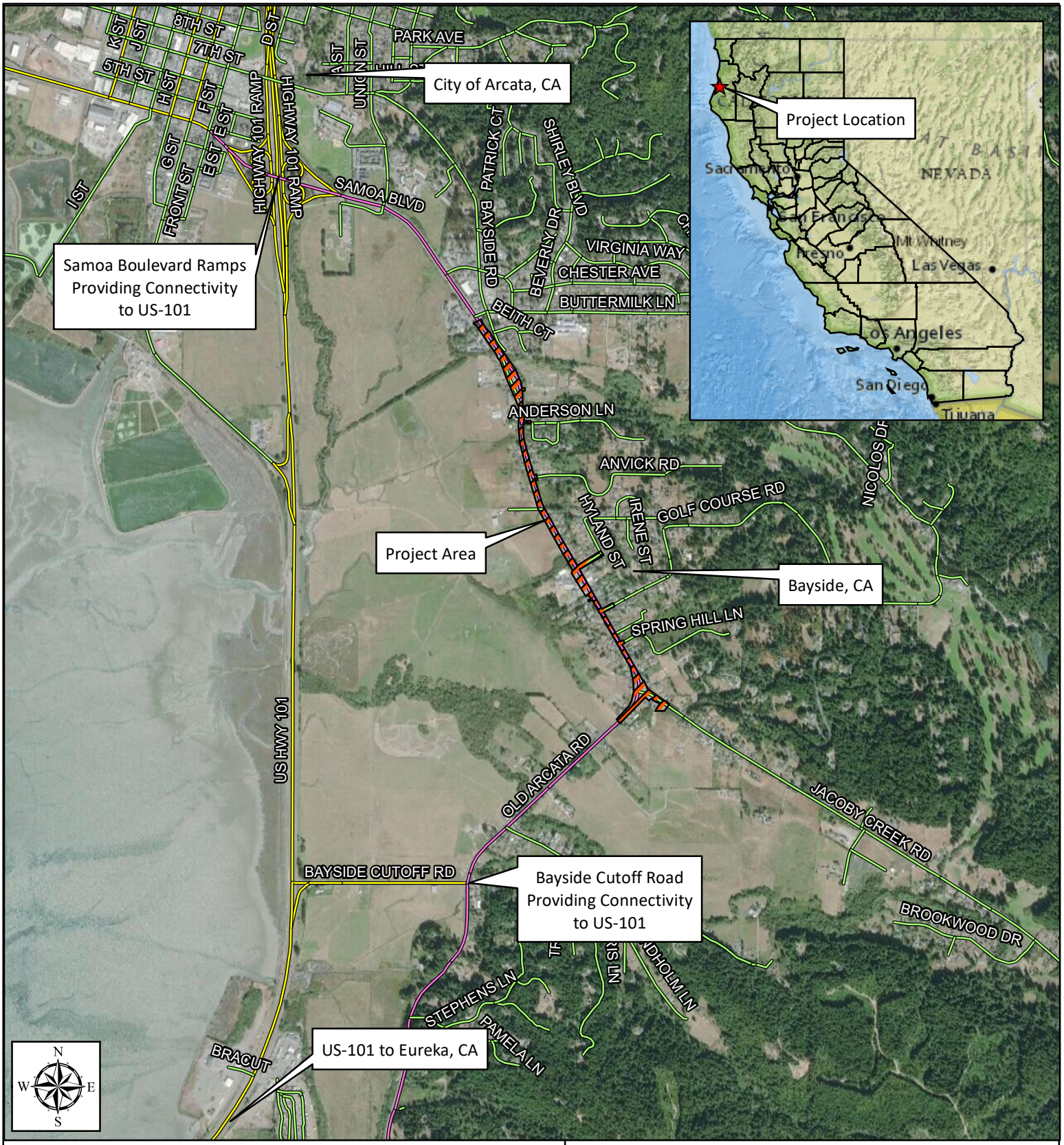
Appendix A – Project Maps



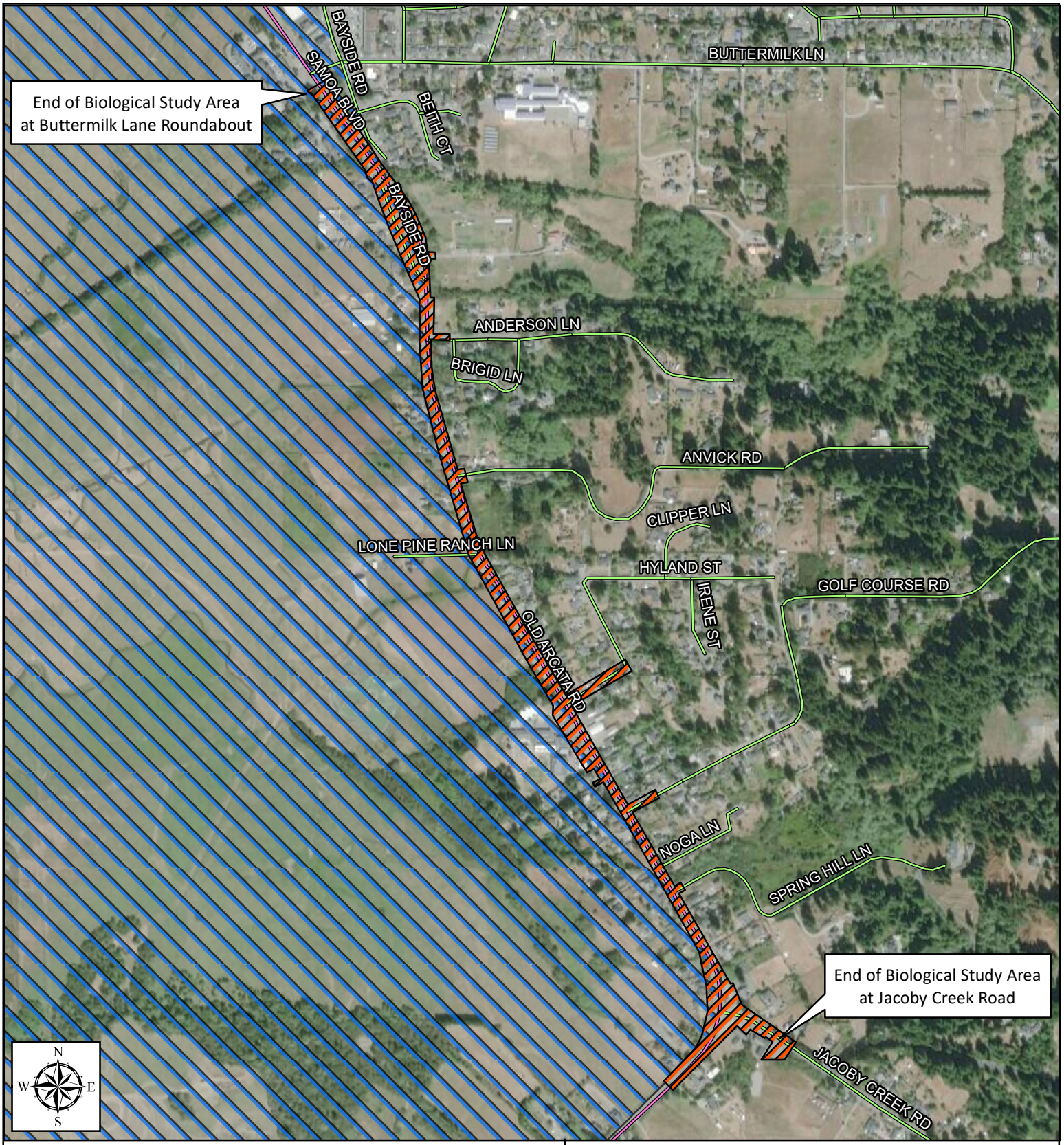
Legend

Biological Study Area

Old Arcata Road Improvements
Humboldt County, California

Figure 1
Project Location Map

NORTHSTAR	Scale: 1:30,000	Date: 23 Jul 2019
	Drawn By: AWB	Checked By: GAV



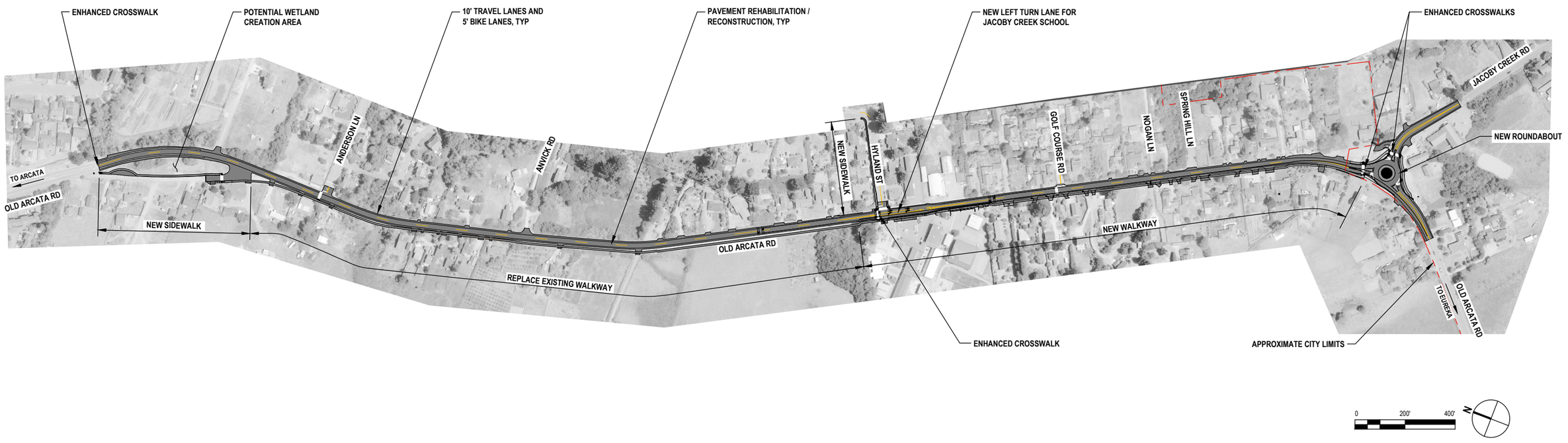
Legend

- Biological Study Area
- California Coastal Zone

Old Arcata Road Improvements
Humboldt County, California

Figure 2
Project Biological Study Area

NORTHSTAR ENVIRONMENTAL RESTORATION	Scale: 1:12,000	Date: 12 Aug 2019
	Drawn By: AWB	Checked By: GAV



Bar is one inch on original size sheet
0 1"

GHD Inc.
718 Third Street
Eureka California 95501 USA
T 1 707 443 8326 **F** 1 707 444 8330 **W** www.ghd.com

Drawn	S. DAVIS	Designer	
Drafting Check	J. WOLF	Design Check	
Project Manager	J.WOLF	Date	JULY 2, 2019
This document shall not be used for construction unless signed and sealed for construction.		Scale	AS SHOWN

Client CITY OF ARCATA
Project OLD ARCATA ROAD IMPROVEMENTS
Title PROJECT COMPONENTS
Project No. 11159130
Original Size ANSI D

FIGURE 3

Plot Date: 3 July 2019 - 9:53 AM Plotted By: Scott Davis Filename: G:\11\11159130 Arcata Old Arcata Road Improvements\06-CAD\Figures\11159130_Figure2_Keycomponents.dwg

Appendix B – Preliminary Environmental Study

DEPARTMENT OF TRANSPORTATION
DISTRICT 1, P. O. BOX 3700
EUREKA, CA 95502-3700
PHONE (707) 445-6410
FAX (707) 441-2048
TTY 711

Making conservation a California Way of Life

December 19, 2018

Netra Khatri
Department of Public Works
City of Arcata
736 F Street
Arcata, CA 95521

City of Arcata
RPSTPL 5021(023)

SUBJECT: **Preliminary Environmental Study (PES) form for the Old Arcata Road Rehabilitation and Pedestrian/Bikeway Improvements from the Roundabout at Buttermilk Road to Jacoby Creek.**

Dear Mr. Khatri:

We have reviewed the revisions you submitted to the Preliminary Environmental Study (PES) form for the Old Arcata Road Rehabilitation and Pedestrian/Bikeway Improvements Project.

Based on the information provided with the PES, it appears the following studies will be required prior to NEPA approval:

- Initial Site Assessment (ISA) for Hazardous Waste – This will be sent to Caltrans for approval; if hazardous materials are found within the project limits additional studies may be required.
- Natural Environment Study (NES) – This will be reviewed and approved by a Caltrans biologist. Impacts to wetlands (wetland delineation required) and water quality should be addressed in this document as well. A Wetlands Only Practicable Alternatives Finding will also need to be prepared.
- Visual Memorandum – the VIA checklist score is 14.
- 4(f) - the project is potentially subject to 4(f) due to the following resources within or adjacent to the limits of the proposed project:
    - on the west side of Old Arcata Road, a "city trail" (existing) appears on City Land Use Maps – please indicate how the City considers the existing sidewalk and bicycle lane/shoulder on the west side of Old Arcata Road; indicate whether the primary purpose and use is for recreational purposes or transportation purposes;
    - Jacoby Creek School provides access to recreational fields on the school grounds – please work with the school administrators to determine whether the school yard is used for sport fields to practice and play; provide information about frequency of use for recreational purposes; describe the primary access to the recreational fields – how

do people get to the fields, where do they park;

- historic properties in an historic district;
- recorded cultural sites subject to SHPO consultation;

When the project design is developed in more detail, it will more clearly reveal whether there will be potential impacts to 4(f) resources and will be easier to discern the applicable documentation such as a *de minimis* finding or a temporary. As more details of the project are developed and designed, the need to consider 4(f) resource documentation will be revisited with a clear determination of the process to comply with 4(f).

- Cultural Resources – to be approved by Caltrans archaeologist. State Historic Preservation Officer (SHPO) concurrence will be necessary under Section 106 of the National Historic Preservation Act:
  - Area of Potential Effects (APE) Map – Attached as part of the PES.
  - Archaeological Survey Report (ASR)
  - Historic Property Survey Report (HPSR)
  - Finding of Effect
  - Historic Property Treatment Plan
  - Memorandum of Agreement
  - Depending on the ultimate scale and scope of the project, a Historic Resources Evaluation Report (HRER) may be necessary

Before construction begins, the City will be responsible for obtaining the following permits (if required):

- Coastal Development Permit from City of Arcata
- Regional Water Quality Control Board 401 Water Quality Certification
- US Army Corps of Engineers Section 404 Nationwide Permit

A copy of the permit(s) will need to be sent to Caltrans Local Assistance before construction begins.

If you have any questions regarding this letter, please call me at (707) 441-4566.

Sincerely,

Linda Evans
Associate Environmental Planner (Retired Annuitant)
Office of Local Assistance

Attachments

cc: STheiss
JLarson
MMueller
DCardiff
CUnger

Rural Non-MPO - Federal Transportation Improvement Program
(Dollars in Thousands)
State Highway System

DIST:	PPNO:	EA:	CTIPS ID:	TITLE (DESCRIPTION):	
01	2509		130-0000-3102	Old Arcata Road Rehabilitation & Pedestrian/Bikeway Improvements (Old Arcata Road/Samoa Blvd from the Buttermilk road Roundabout to Jacoby Creek Road. Rehabilitation and widening /improvement including Class 2 Bike lanes, pedestrian paths, and intersection safety improvements at Jacoby Creek Road. Roundabout / channelization.)	MPO Aprv: 05/04/2018
CT PROJECT ID:			MPO ID.:		State Aprv: 05/04/2018
					Federal Aprv: 05/24/2018
COUNTY:	ROUTE:		PM:		
Humboldt County					EPA TABLE II or III EXEMPT CATEGORY

IMPLEMENTING AGENCY: Arcata, City of
PROJECT MANAGER: Netra Khatri PHONE: (707) 825-2173 EMAIL: nkhatri@cityofarcata.org

PROJECT VERSION HISTORY (Printed Version is Shaded)

Dollars in Thousands - Total For Project

Version	Status	Date	Updated By	Change Reason	Amend No.	Prog Con	Prog RW	PE
1	Official	05/04/2018	MPOGREEN	Amendment - New Project	32	2,613		325

* RIP - Local Roads		PRIOR	16-17	17-18	18-19	19-20	20-21	21-22	BEYOND	TOTAL
* Fund Source 1 of 2	PE					150				150
* Fund Type: STIP Advance Construction	RW									
	CON						2,388			2,388
* Funding Agency: Humboldt County Association of Governments	Total:					150	2,388			2,538

* Local Funds - Locally Generated Funds		PRIOR	16-17	17-18	18-19	19-20	20-21	21-22	BEYOND	TOTAL
* Fund Source 2 of 2	PE				175					175
* Fund Type: Local Transportation Funds - Advance Construction	RW									
	CON						225			225
* Funding Agency: Arcata, City of	Total:				175		225			400

Project Total:		PRIOR	16-17	17-18	18-19	19-20	20-21	21-22	BEYOND	TOTAL
	PE				175	150				325
	RW									
	CON						2,613			2,613
	Total:				175	150	2,613			2,938

Comments:
******** Version 1 - 04/12/18 ********
Project data transfered from 2018 STIP 1. Program new project for PE only Program new project per the CTC Adopted 2018 STIP. -lgreen

EXHIBIT 6-A PRELIMINARY ENVIRONMENTAL STUDY (PES)

Federal Project No.: RPSTPL-5021(023) *(Federal Program Prefix-Project No., Agreement No.)*
Final Design: 07/01/2019 *(Expected Start Date)*

To: Mark E. Mueller *(District Local Assistance Engineer)*
District 1 *(District)*
P.O. Box 3700, Eureka, CA 95502 *(Address)*
mark.mueller@dot.ca.gov *(Email Address)*

From: City of Arcata *(Local Agency)*
Netra Khatri, PE 707-825-2173 *(Project Manager's Name and Telephone No.)*
525 9th Street, Arcata, CA 95521 *(Address)*
nkhatri@cityofarcata.org *(Email Address)*

Is this Project "ON" the State Highway System? ☐ Yes ☑ No **IF YES, STOP HERE** and contact the District Local Assistance Engineer regarding the completion of other environmental documentation.

Federal State Transportation Improvement Program (FSTIP) 2017 *(Currently Adopted Plan Date)* attached *(Page No.___ attach to this form)*
http://www.dot.ca.gov/hq/transprog/oftmp.htm

Programming for FSTIP:	**Preliminary Engineering**		**Right of Way**		**Construction**	
	19/20 *(Fiscal Year)*	$ 150 *(Dollars)*	-- *(Fiscal Year)*	$ 0 *(Dollars)*	20-21 *(Fiscal Year)*	$ 2,388 *(Dollars)*

Project Description as Shown in RTP and FSTIP:

Old Arcata Road Rehabilitation & Pedestrian/Bikeway Improvements

Detailed Project Description: *(Describe the following, as applicable: purpose and need, project location and limits, required right of way acquisition, proposed facilities, staging areas, disposal and borrow sites, construction activities, and construction access.)*

Old Arcata Road Rehabilitation & Pedestrian/Bikeway Improvements (Old Arcata Road/Samoa Blvd from the Buttermilk road Roundabout to Jacoby Creek Road. Rehabilitation and widening /improvement including Class 2 Bike lanes, pedestrian paths, and intersection safety improvements at Jacoby Creek Road. Roundabout / channelization.)

(Continue description on "Notes" sheet, last page of this Exhibit, if necessary)

Preliminary Design Information:
Does the project involve any of the following? Please check the appropriate boxes and delineate on an attached map, plan, or layout including any additional pertinent information.

Yes	No		Yes	No		Yes	No	
☑	☐	Widen existing roadway	☑	☐	Ground disturbance	☑	☐	Easements
☐	☑	Increase number of through lanes	☑	☐	Road cut/fill	☑	☐	Equipment staging
☐	☑	New alignment	☑	☐	Excavation: anticipated maximum depth 6ft	☑	☐	Temporary access road/detour
☐	☑	Capacity increasing—other (e.g., channelization)	☑	☐	Drainage/culverts	☑	☐	Utility relocation
☑	☐	Realignment	☐	☑	Flooding protection	☐	☑	Right of way acquisition (if yes, attach map with APN)
☐	☑	Ramp or street closure	☐	☑	Stream channel work	☐	☑	Disposal/borrow sites
☐	☑	Bridge work	☐	☑	Pile driving	☐	☑	Part of larger adjacent project
☑	☐	Vegetation removal						
☑	☐	Tree removal	☑	☐	Demolition	☐	☑	Railroad

Required Attachments:

☑ Regional map ☑ Project location map ☐ Project footprint map (existing/proposed right of way)

☐ Engineering drawings (existing and proposed cross sections), if available ☐ Borrow/disposal site location map, if applicable
(Note: all maps (except project location map and regional maps) should be consistent with the project description (minimum scale: 1" = 200').)

☑ GeoTracker Printout for Hazardous Materials (http://geotracker.waterboards.ca.gov/).

☑ Federal Threatened and Endangered Species List from USFWS (http://ecos.fws.gov/ipac/).

☑ Federal Threatened and Endangered Species List from NMFS (http://www.westcoast.fisheries.noaa.gov/maps/data/california species listtools.html).

☐ Current Photos of Project Site ☑ FEMA map ☑ VIA Questionnaire

Examine the project for potential effects on the environment, direct or indirect and answer the following questions. The "construction area," as specified below, includes all areas of ground disturbance associated with the project, including staging and stockpiling areas and temporary access roads.

Each answer must be briefly documented on the "Notes" pages at the end of the PES Form.

A. Potential Environmental Effects	Yes	To Be Determined	No
General			
1. Will the project require future construction to fully utilize the design capabilities included in the proposed project?	☐	☐	☑
2. Will the project generate public controversy?	☐	☑	☐
Noise			
3. Is the project a Type I project as defined in 23 CFR 772.5(h); "construction on new location or the physical alteration of an existing highway, which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes"?	☐	☐	☑
4. Does the project have the potential for adverse construction-related noise impact (such as related to pile driving)?	☐	☑	☐
Air Quality			
5. Is the project in a NAAQS non-attainment or maintenance area?	☐	☐	☑
6. Is the project exempt from the requirement that a conformity determination be made? (If "Yes," state which conformity exemption in 40 CFR 93.126, Table 2 applies): Safet	☐	☐	☐
7. Is the project exempt from regional conformity? (If "Yes," state which conformity exemption in 40 CFR 93.127, Table 3 applies): _____	☐	☐	☐
8. If project is not exempt from regional conformity, (If "No" on Question #7)			
Is project in a metropolitan non-attainment/maintenance area?	☐	☐	☐
Is project in an isolated rural non-attainment area?	☐	☐	☐
Is project in a CO, PM10 and/or PM2.5 non-attainment/maintenance area?	☐	☐	☐
Hazardous Materials/Hazardous Waste			
9. Is there potential for hazardous materials (including underground or aboveground tanks, etc.) or hazardous waste (including oil/water separators, waste oil, asbestos-containing material, lead-based paint, ADL, etc.) within or immediately adjacent to the construction area?	☐	☑	☐
Water Quality/Resources			
10. Does the project have the potential to impact water resources (rivers, streams, bays, inlets, lakes, drainage sloughs) within or immediately adjacent to the project area?	☑	☐	☐
11. Is the project within a designated sole-source aquifer?	☐	☐	☑

Coastal Zone			
12. Is the project within the State Coastal Zone, San Francisco Bay, or Suisun Marsh?	☑	☐	☐
Floodplain			
13. Is the construction area located within a regulatory floodway or within the base floodplain (100-year) elevation of a watercourse or lake?	☐	☐	☑
Wild and Scenic Rivers			
14. Is the project within or immediately adjacent to a Wild and Scenic River System?	☐	☐	☑
Biological Resources			
15. Is there a potential for federally listed threatened or endangered species, or their critical habitat or essential fish habitat to occur within or adjacent to the construction area?	☐	☑	☐
16. Does the project have the potential to directly or indirectly affect migratory birds, or their nests or eggs (such as vegetation removal, box culvert replacement/repair, bridge work, etc.)?	☑	☐	☐
17. Is there a potential for wetlands to occur within or adjacent to the construction area?	☑	☐	☐
18. Is there a potential for agricultural wetlands to occur within or adjacent to the construction area?	☑	☐	☐
19. Is there a potential for the introduction or spread of invasive plant species?	☑	☐	☐
Sections 4(f) and 6(f)			
20. Are there any historic sites or publicly owned public parks, recreation areas, wildlife or waterfowl refuges (Section 4[f]) within or immediately adjacent to the construction area?	☐	☑	☐
21. Does the project have the potential to affect properties acquired or improved with Land and Water Conservation Fund Act (Section 6[f]) funds?	☐	☐	☑
Visual Resources			
22. Does the project have the potential to affect any visual or scenic resources?	☐	☑	☐
Relocation Impacts			
23. Will the project require the relocation of residential or business properties?	☐	☐	☑
Land Use, Community, and Farmland Impacts			
24. Will the project require any right of way, including partial or full takes? Consider construction easements and utility relocations.	☐	☑	☐
25. Is the project inconsistent with plans and goals adopted by the community?	☐	☐	☑
26. Does the project have the potential to divide or disrupt neighborhoods/communities?	☐	☐	☑
27. Does the project have the potential to disproportionately affect low-income and minority populations?	☐	☐	☑
28. Will the project require the relocation of public utilities?	☐	☑	☐
29. Will the project affect access to properties or roadways?	☐	☑	☐
30. Will the project involve changes in access control to the State Highway System (SHS)?	☐	☐	☑
31. Will the project involve the use of a temporary road, detour, or ramp closure?	☐	☐	☑
32. Will the project reduce available parking?	☐	☑	☐
33. Will the project construction encroach on state or federal lands?	☐	☐	☑
34. Will the project convert any farmland to a different use or impact any farmlands?	☐	☐	☑
Cultural Resources			
35. Is there National Register listed, or potentially eligible historic properties, or archaeological resources within or immediately adjacent to the construction area? *(Note: Caltrans PQS answers question #35)*	☑	☐	☐
36. Is the project adjacent to, or would it encroach on Tribal land?	☐	☐	☑

For Sections B, C, and D, check appropriate box to indicate required technical studies, coordination, permits, or approvals.

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/Approvals
☑ **Traffic**		
Check one:		
☐ Traffic Study	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☑ Discussion in ED Only	☑ Caltrans	☑ Approval
☑ **Noise**		
Check as applicable:		
☐ Traffic Related		
☑ Construction Related		
Check one:		
☐ Noise Study Report	☐ Caltrans	☐ Approval
☐ NADR	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☑ Discussion in ED Only	☑ Caltrans	☑ Approval
☐ **Air Quality**		
Check as applicable:		
☐ Traffic Related		
☐ Construction Related		
Check one:		
☐ Air Quality Report	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
	☐ FHWA	☐ Conformity Finding (23 USC 327 CEs, EAs, EISs)
	☐ Caltrans	☐ Conformity Finding (23 USC 326 CEs)
	☐ Regional Agency	☐ PM10/PM2.5 Interagency Consultation
☑ **Hazardous Materials/ Hazardous Waste**		
Check as applicable:		
☑ Initial Site Assessment (Phase 1)	☑ Caltrans	☑ Approval
☐ Preliminary Site Assessment (Phase 2)	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
	☐ Cal EPA DTSC	☐ Review Database
	☐ Local Agency	☐ Review Database
☑ **Water Quality/Resources**		
Check as applicable:		
☐ Water Quality Assess. Report	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☑ Discussion in ED Only	☑ Caltrans	☑ Approval
☐ **Sole-Source Aquifer (Districts 5, 6 and 11)**	☐ EPA (S.F. Regional Office)	☐ Approval of Analysis in ED
☑ **Coastal Zone**	☐ CCC	☐ Coastal Zone Consistency Determination
	☑ City of Arcata	
	☐ County of Humboldt	

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/Approvals
☐ **Floodplain**		
Check as applicable:		
☐ Location Hydraulic Study	☐ Caltrans	☐ Approval
☐ Floodplain Evaluation Report	☐ Caltrans	☐ Approval
☐ Summary Floodplain Encroachment Report	☐ Caltrans	☐ Approval
	☐ Caltrans	☐ Only Practicable Alternative Finding
	☐ FHWA	☐ Approves significant encroachments and concurs in Only Practicable Alternative Findings
☐ **Wild and Scenic Rivers**	☐ River Managing Agency	☐ Wild and Scenic Rivers Determination
☑ **Biological Resources**		
Check as applicable:		
☐ NES, Minimal Impact	☑ Caltrans	☑ Approval
☑ NES		
☐ BA	☐ Caltrans	☐ Approves for Consultation
	☐ USFWS ☐ NOAA Fisheries	☐ Section 7 Informal/Formal Consultation
☐ EFH Evaluation	☐ NOAA Fisheries	☐ MSA Consultation
☐ Bio-Acoustic Evaluation	☐ NOAA Fisheries	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☑ **Wetlands**		
Check as applicable:		
☑ WD and Assessment	☑ Caltrans	☑ Approval
	☑ ACOE	☑ Wetland Verification
	☐ NRCS	☐ Agricultural Wetland Verification
	☐ Caltrans	☐ Wetlands Only Practicable Alternative Finding
☑ **Invasive Plants**		
☑ Discussion in ED Only	☑ Caltrans	☑ Approval
☑ **Section 4(f)**		
Check as applicable:		
	☑ Caltrans	☑ Determine Temporary Occupancy
☑ De minimis	☑ Caltrans	☑ De minimis finding
☐ Programmatic 4(f) Evaluation Type: _____	☐ Caltrans	☐ Approval
☐ Individual 4(f) Evaluation	☐ Caltrans	☐ Approval
	☐ Agency with Jurisdiction ☐ SHPO ☐ DOI ☐ HUD ☐ USDA	

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/Approvals
☐ **Section 6(f)**	☐ Agency with Jurisdiction ☐ NPS	☐ Determines Consistency with Long-Term Management Plan
	☐ NPS	☐ Approves Conversion
☑ **Visual Resources**		
☑ Technical Memorandum	☑ Caltrans	☑ Approval
☐ Minor VIA	☐ Caltrans	☐ Approval
☐ Moderate VIA	☐ Caltrans	☐ Approval
☐ Advance/Complex VIA	☐ Caltrans	☐ Approval
☐ **Relocation Impacts**		
Check one:		
☐ Relocation Impact Memo	☐ Caltrans	☐ Approval
☐ Relocation Impact Study	☐ Caltrans	☐ Approval
☐ Relocation Impact Report	☐ Caltrans	☐ Approval
☐ **Land Use and Community Impacts**		
Check one:		
☐ CIA	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
☐ **Construction/Encroachment on State Lands**		
Check as applicable:		
☐ SLC Jurisdiction	☐ SLC	☐ SLC Lease
☐ Caltrans Jurisdiction	☐ Caltrans	☐ Encroachment Permit
☐ SP Jurisdiction	☐ SP	☐ Encroachment Permit
☐ **Construction/Encroachment on Federal Lands**	☐ Federal Agency with Jurisdiction	☐ Encroachment Permit
☐ **Construction/Encroachment On Indian Trust Lands**	☐ Bureau of Indian Affairs	☐ Right of Way Permit
☐ **Farmlands**		
Check one:		
☐ CIA	☐ Caltrans	☐ Approval
☐ Technical Memorandum	☐ Caltrans	☐ Approval
☐ Discussion in ED Only	☐ Caltrans	☐ Approval
Check as applicable:		
☐ Form AD 1006	☐ NRCS	☐ Approves Conversion
	☐ CDOC	☐ Approves Conversion
☐ Conversion to Non-Agri Use	☐ ACOE	

B. Required Technical Studies and Analyses	C. Coordination	D. Anticipated Actions/Permits/ Approvals
☑ **Cultural Resources** (**PQS completes this section**)	☐ Caltrans PQS	☐ Screened Undertaking
☑ APE Map	☑ Caltrans PQS and DLAE	☑ Approves APE Map
	☑ Local Preservation Groups and/or Native American Tribes	☑ Provides Comments Regarding Concerns with Project
☑ HPSR ☑ ASR ☑ HRER	☑ Caltrans	☑ Approves for Consultation
☑ Finding of Effect Report	☑ Caltrans	☐ Concurs on No Effect, No Adverse Effect with Standard Conditions
	☑ SHPO	☑ Letter of Concurrence on Eligibility, No Adverse Effect without Standard
☑ MOA	☑ Caltrans	☑ Approves MOA
	☑ SHPO	☑ Approves MOA
	☐ ACHP (if requested)	☐ Approves MOA
☑ **Permits** Copies of permits and a list of mitigation commitments are mandatory submittals following NEPA approval.	☑ ACOE	☑ Section 404 Nationwide Permit
	☐ ACOE	☐ Section 404 Individual Permit
	☐ Caltrans/ACOE/EPA ☐ USFWS ☐ NOAA Fisheries	☐ NEPA/404 Integration MOU
	☐ ACOE	☐ Rivers and Harbors Act Section 10 Permit
	☐ USCG	☐ USCG Bridge Permit
	☑ RWQCB	☑ Section 401 Water Quality Certification
	☐ CDFW	☐ Section 1602 Streambed Alteration Agreement
	☐ RWQCB	☐ NPDES Permit
	☐ CCC ☑ Local Agency	☑ Coastal Zone Permit
	☐ BCDC	☐ BCDC Permit

Notes: Additional studies may be required for other federal agencies.

ACHP = Advisory Council on Historic Preservation
ACOE = U.S. Army Corps of Engineers
ADL = Aerially Deposited Lead
APE = Area of Potential Effect
APN = Assessor Parcel Number
ASR = Archaeological Survey Report
BA = Biological Assessment
BCDC = Bay Conservation and Development Commission
BE = Biological Evaluation
BO = Biological Opinion
Cal EPA = California Environmental Protection Agency
CCC = California Coastal Commission
CDFW = California Department of Fish and Wildlife
CDOC = California Department of Conservation
CE = Categorical Exclusion
CIA = Community Impact Assessment
CWA = Clean Water Act
DLAE = District Local Assistance Engineer
DOI = U.S. Department of Interior
DTSC = Department of Toxic Substances Control
EA = Environmental Assessment
ED = Environmental Document
EFH = Essential Fish Habitat
EIS = Environmental Impact Statement
EPA = U.S. Environmental Protection Agency
FEMA = Federal Emergency Management Agency
FHWA = Federal Highway Administration
FONSI = Finding of No Significant Impacted
FTIP = Federal Transportation Improvement Program
HPSR = Historic Property Survey Report
HRER = Historical Resources Evaluation Report
HUD = U.S. Housing and Urban Development
MOA = Memorandum of Agreement
MSA = Magnuson-Stevens Fishery Conservation and Management Act
NEPA = National Environmental Policy Act
NADR = Noise Abatement Decision Report
NES = Natural Environment Study
NHPA = National Historic Preservation Act
NOAA = National Oceanic and Atmospheric Administration
NMFS National Marine Fisheries Service
NPDES = National Pollutant Discharge Elimination System
NPS = National Park Service
NRCS = Natural Resources Conservation Service
PM10 = Particulate Matter 10 Microns in Diameter or Less
PM2.5 = Particulate Matter 2.5 Microns in Diameter or Less
PMP = Project Management Plan
PQS = Professionally Qualified Staff
ROD = Record of Decision
RTIP = Regional Transportation Improvement Program
RTP = Regional Transportation Plan
RWQCB = Regional Water Quality Control Board
SER = Standard Environmental Reference
SEP = Senior Environmental Planner
SHPO = State Historic Preservation Officer
SLC = State Lands Commission
SP = State Parks
TIP = Transportation Improvement Program
USCG = U.S. Coast Guard
USDA = U.S. Department of Agriculture
USFWS = U.S. Fish and Wildlife Service
WD = Wetland Delineation

E. Preliminary Environmental Document Classification (NEPA)

Based on the evaluation of the project, the environmental document to be developed should be:

Check one:

- ☐ Environmental Impact Statement (*Note: Engagement with participating agencies in accordance with 23 USC 139 required)*
  - ☐ Compliance with 23 USC 139 regarding Participating Agencies required
- ☐ Complex Environmental Assessment
- ☐ Routine Environmental Assessment
- ☐ Categorical Exclusion without required technical studies.
- ☑ Categorical Exclusion with required technical studies

(if Categorical Exclusion is selected, check one of the following):

- ☑ Section 23 USC 326
  - ☑ 23 CFR 771 activity (c)(3)
  - ☐ 23 CFR 771 activity (d) (_____)
  - ☐ Activity _____ listed in the Section 23 USC 326
- ☐ Section 23 USC 327

F. Public Availability and Public Hearing

Check as applicable:

- ☑ Not Required
- ☐ Notice of Availability of Environmental Document
- ☐ Public Meeting
- ☐ Notice of Opportunity for a Public Hearing
- ☐ Public Hearing Required

G. Signatures

Local Agency Staff and/or Consultant Signature

(Signature of Preparer)	09/25/2018 (Date)	707-443-8326 (Telephone No.)

Josh Wolf
(Name)

Local Agency Project Engineer Signature

This document was prepared under my supervision, according to the *Local Assistance Procedures Manual*, Exhibit 6-B, "Instructions for Completing the Preliminary Environmental Study Form."

(Signature of Local Agency)	09/28/2018 (Date)	1707-825-2173 (Telephone No.)

Caltrans District Professionally Qualified Staff (PQS) Signature

☐ Project does not meet definition of an "undertaking"; no further review is necessary under Section 106 ("No" Section A, #35).

☐ Project is limited to the type of activity listed in Attachment 2 of the Section 106 PA and based on the information provided in the PES Form, the project does not have the potential to affect historic properties ("No" Section A, #35).

☑ Project is limited to the type of activity listed in Attachment 2 of the Section 106 PA, but the following additional procedures or information is needed to determine the potential for effect ("To Be Determined" Section A, #35):

☑ Records Search ☑ ASR ☑ HPSR ☒ FOE & MOA

☐ Project meets the definition of an "undertaking"; all properties in the project area are exempt from evaluation per Attachment 4 of the Section 106 PA ("No" Section A, #35).

☑ The proposed undertaking is considered to have the potential to affect historic properties; further studies for 106 compliance are indicated in Sections B, C, and D of this PES Form ("Yes" Section A, #35).

(Signature of Professionally Qualified Staff)	08/31/2018 *(Date)*	707-445-5335 *(Telephone No.)*

The following signatures are required for all CEs, routine and complex EAs, and EISs:

Caltrans District Senior Environmental Planner (or Designee) and DLAE Signatures

I have reviewed this Preliminary Environmental Study (PES) Form and determined that the submittal is complete and sufficient. I concur with the studies to be performed and the recommended NEPA Class of Action.

(Signature of Senior Environmental Planner or Designee) Acting	12/19/18 *(Date)*	707-445-6410 *(Telephone No.)*
Jenna Larson *(Name)*		
(Signature of District Local Assistance Engineer or Designee)	12/20/18 *(Date)*	707/445-6399 *(Telephone No.)*
Suzanne Thoss *(Name)*		

☐ HQ DEA Environmental Coordinator concurrence _____. Email concurrence attached.
(date)

Preliminary Environmental Investigation
Notes to Support the Conclusions of the PES Form
(May Also Include Continuation of Detailed Project Description)

Brief Explanation of How Project Complies, or Will Comply with Applicable Federal Mandate (Part A):

1. The project will be implemented in one construction season, and will not require future construction to fully utilize the design capabilities included in the proposed project.
2. It is unlikely that the project will generate public controversy, as the project will improve road conditions and safety for motorists, pedestrians and bicyclists. Substantial public outreach has already occurred for the project.
3. The project is not a Type I project as defined in 23 CFR 772.5(h) because it does not contain any of the eight components representative of a Type I project.
4. The project will involve some construction-related noise, however the volume and amplitude of noise impacts is uncertain at this point due to pending design finalization. The construction-related noise is not anticipated to be
5. The project is not in an National Ambient Air Quality Standards (NAAQS) non-attainment or maintenance area. However, the project is located in a non-attainment area for PM10 by State Ambient Air Quality Standards.
6. The project is exempt from the requirement that a conformity determination be made due to the Safety exemption within 40 CFR 93.126, Table 2, specifically: Projects that correct, improve or eliminate a hazardous location or
7. The project may be exempt from regional conformity and requires further assistance from CalTrans to make the determination. The roundabout feature at the south end of the project area may trigger the exemption.
8. The project is not in a metropolitan area; the project is located in a rural area that is in attainment by NAAQS standards, however is in non-attainment for PM 10 by State Ambient Air Quality Standards (SAAQS).
9. The project area may contain hazardous materials or hazardous waste within or immediately adjacent to the construction area. A preliminary investigation utilizing the GeoTracker database yields three records of hazardous
10. The project has the potential to impact water resources adjacent to the project area, however construction BMPs will be implemented to avoid impacts to water resources.
11. The project is not within a designated sole-source aquifer.
12. The project is within the CA Coastal Zone.
13. According to FEMA's Flood Insurance Rate Map, the project is not located within a floodway or 100-year floodplain.
14. The project is not within or adjacent to a Wild and Scenic River System.
15. It is not anticipated that the project will contain any habitat for federally listed threatened or endangered species, however creeks that are potential habitat for federally threatened Coho salmon juxtapose the project.
16. The project has the potential to directly or indirectly affect migratory birds or their nests due to vegetation modifications associated with the project.
17. There is potential for wetlands to occur within or adjacent to the construction area.
18. There is potential for agricultural wetlands to occur within or adjacent to the construction area.
19. There is potential for the introduction or spread of invasive plant species, especially Himalayan blackberry.

20. Caltrans District 1 Local Assistance will be consulted to determine the applicability of a de minimis technical finding. Potential historic or archaeological sites may exist in the project site area; further investigations are necessary. A
21. The project will not affect properties acquired or improved with Land and Water Conservation Fund Act funds because there are no projects funded through the Land and Water Conservation Act in the Project vicinity.
22. The project may affect visual or scenic resources.
23. The project will not relocate any residential or business properties.
24. The project may require right of way, partial takes or temporary construction easements. Further investigation and finalization of project designs are necessary.
25. The project is not inconsistent with plans and goals adopted by the community. The project is consistent with goals listed in the Humboldt County General Plan Circulation Element: C-G1: Circulation System Safety and Functionality;
26. The project does not have the potential to divide or disrupt neighborhoods or communities because no significant changes to the current road is expected to take place.
27. The project will not disproportionately affect low-income and minority populations, as this project is an improvement to current road conditions and pedestrian transportation opportunities for all community members.
28. The project may require the relocation of public utilities.
29. The project may affect access to properties or roadways.
30. The project does not involve a state highway and therefore will not affect access control to the State Highway System (SHS).
31. The project will not involve the use of a temporary road, detour, or ramp closure.
32. The project may reduce available parking although further design and analysis is required.
33. The project construction will not encroach on state or federal lands.
34. The project will not convert any farmland to different uses, nor will the project impact any farmlands.
35. Caltrans to answer.
36. The project is not adjacent to or would encroach on Tribal land.

Continuation of Detailed Project Description:

The Old Arcata Road Improvements project (project) will improve the roadway, make the corridor pedestrian and bicyclist friendly and construct a roundabout that will aid in traffic flow. The City of Arcata Engineering Department has completed the preliminary design for the project which will rehabilitate a portion of Old Arcata Rd, widen Class 2 bike lanes, improve pedestrian paths, and add a traffic calming feature at the Jacoby Creek Road intersection. There is a need for improvements along Old Arcata Road to promote pedestrian, bicyclist, and motorist safety. Currently the road experiences motorists traveling at high speeds and provides limited pedestrian/bicycle facilities. The road condition varies throughout the project area but a large amount scored "poor" for pavement condition index (PCI) (NCE, 2017). The project includes approximately 6,000 feet of Old Arcata Road. from the Buttermilk Road roundabout to Jacoby Creek Road. The project also includes widening and improvements to Class 2 bike lanes, improvement of pedestrian paths, and intersection safety improvements at Jacoby Creek Road through the implementation of a roundabout or channelization work. Right of way acquisition may be necessary to accommodate the roundabout at Jacoby Creek Road; no other right of way acquisitions are anticipated for the project. Staging area locations for project-related equipment and materials is to be determined, however it is anticipated that a portion of land owned by the City of Arcata along Old Arcata Road will be designated as the staging area. Fill sourced from the project may be utilized in other City of Arcata projects, and conversely any fill required for the project may be sourced from other City projects taking place concurrently. Construction activities include removal or milling of failed asphalt sections of road, excavation and grading, treating and compacting base fill material, installing new asphalt and/or concrete pavements and surfacing roadways, painting road markings, signage, and final stabilization.

Appendix C – DRAFT Special Status Plant Survey and ESHA Evaluation

Memorandum

October 8, 2018

To:	City of Arcata	Ref. No.:	11159130
From:	Amy Livingston, GHD Botanist	Tel:	707-443-8326
CC:	Josh Wolf (GHD Project Manager)		

Subject: **DRAFT Special Status Plant Survey and ESHA Evaluation for the Old Arcata Road Improvement Project**

1 Introduction

This Technical Memorandum reports results of the 2018 special status plant surveys and screening for Environmentally Sensitive Habitat Areas (ESHA) in the area of the Old Arcata Road Improvement Project in Humboldt County, CA (Figure 1, Attachment 1). The area covered by the surveys is presented in Figures 2:1-5, Attachment 1. The special status plant surveys and screening for Environmentally Sensitive Habitat Areas (ESHA) were performed by GHD botanist Amy Livingston on behalf of the City of Arcata. Special status plant surveys were performed on June 18 and July 31, 2018. Vegetation mapping to screen for Environmentally Sensitive Habitat Areas (ESHA) was performed by Amy Livingston on August 31, 2018 and on September 20, 2018 concurrent with fieldwork for the wetland delineation.

1.1 Purpose

The purpose of this evaluation was to conduct seasonally appropriate surveys for state, federal, and other sensitive listed plant species in the proposed project area as well to assess the potential for upland Environmentally Sensitive Habitat Areas (ESHA) to conform with the Coastal Act, and Humboldt County and the City of Arcata's Local Coastal Programs. The surveys were conducted within the Project Study Boundary (PSB), as shown on Figures 2:1-5. The special status plant surveys attempted to identify all vascular plants within the study area to the taxonomic level necessary to determine rarity and listing status, and to document the presence of special status plants within the project footprint, immediately adjacent to, and within temporary construction impact areas. The results of the wetland delineation and mapping of one and three parameter wetlands are presented in a separate wetland delineation report (GHD 2018). Projects affecting wetlands must conform to Section 30233 of the Coastal Act, while projects affecting ESHA must conform to Section 30240 of the Coastal Act. The results may be used for planning, design, and to avoid or mitigate impacts associated with project construction, and to guide future management decisions.

1.2 Location

The Project Study Boundary (PSB) for the Old Arcata Road Improvement Project includes Old Arcata Road and adjacent roadsides through the community of Bayside, between the intersections with Buttermilk Road and Jacoby Creek Road, as well as short sections of adjacent roads and roadsides (Figure 1). The PSB is primarily within the Coastal Zone, and primarily within jurisdiction of the City of Arcata, and within the appeal

zone of the California Coastal Commission. A section of the PSB (a portion of the intersection with Jacoby Creek Road) is located in Humboldt County primary jurisdiction, within the appeal zone of the Coastal Commission.

1.3 Project Summary

The Old Arcata Road Improvement Project is intended to provide roadway improvements to Old Arcata Road through the community of Bayside, between the Buttermilk Road Roundabout and Jacoby Creek Road. The project will improve safety for non-motorized and motorized users, increase the use of active modes of transportation, and rehabilitate the failed roadway pavement. The Project will have additional benefits including enhanced and heightened driver awareness of the community, and filling the gap for non-motorized travel between the Jacoby Creek School and Jacoby Creek Road.

2 Regulatory Setting

2.1 State Jurisdiction

2.1.1 State Listed Special Status Plant Species

Special status plant species under State jurisdiction include those listed as endangered, threatened, or as candidate species by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA). Plant species on California Native Plant Society's (CNPS) California Rare Plant Ranking (CRPR) Lists 1A, 1B 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 do not have formal protection under CEQA. 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 (CDFW 2018a). A project is required to have a "Scientific, Educational, or Management Permit" from CDFW for activities that would result in "take," possession, import, or export of state-listed plant species including research, seed banking, reintroduction efforts, habitat restoration, and other activities relating to any plant designated SE (State endangered), ST (State threatened), SR (State rare), or SC (State candidate for listing).

2.2 Federal Jurisdiction

2.2.1 Federal Listed Species

Special status plant species under Federal jurisdiction include those listed as endangered, threatened, or as candidate species by the Fish and Wildlife Service (USFWS) under the U.S. Endangered Species Act (ESA).

2.2.2 Critical Habitat

Critical Habitat is defined by the ESA as a specific geographic area containing features essential for the conservation of an endangered or threatened species. The ESA requires consultation with USFWS by federal lead agencies for activities they carry out, authorize, or fund. Under Section 7 of the ESA, critical habitat federally designated for a listed or proposed species that may be present in project Action Area should be evaluated.

2.2.3 California Coastal Act and Local Coastal Programs

The California Coastal Commission (CCC) through the Coastal Act, and the City of Arcata and the County of Humboldt through their Local Coastal Programs are the jurisdictional agencies that exert authority in identifying and protecting ESHA for projects. Section 30107.5 of the Coastal Act defines ESHA as: "*Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."*

3 Methods

3.1 Project Study Boundary / Action Area

Prior to conducting environmental fieldwork, the project scientist worked in coordination with the project manager and the applicant to develop the limits of the Project Study Boundary (PSB). The PSB is a terminology adopted from definitions and permit procedures promulgated by the U.S. Army Corps of Engineers (USACE). The PSB is designated on a project specific basis, and as feasible, to take into consideration potential alternate layouts of project, fill/cut slopes, temporary impact areas and/or adjacent areas if feasible, access, new or modified utilities and right of ways, and adjacent areas that may be feasibly included in the study. The PSB may be modified on a project-specific basis according to such issues as private property ownerships, access constraints, and areas excluded from project use. The PSB for the Old Arcata Road improvement Project is shown in Figures 2:1-5.

3.2 Pre-Survey Research

Prior to field surveys, a scoping list of CRPR plant species and habitats with recorded occurrences in the project vicinity was compiled by consulting the *California Natural Diversity Database* (CNDDB) [CDFW 2018b], the CNPS *Inventory of Rare and Endangered Vascular Plants* (CNPS 2018), and the list of Federally listed plant species maintained by the U.S. Fish and Wildlife Service (USFWS 2018). The CNDDB database was consulted for rare plant occurrences documented in the project vicinity.

The scoping list includes special-status plants that occur in habitat similar to the project area with documented occurrences on the Arcata South USGS quadrangle or adjacent quadrangles. CDFW and CNPS recommend the assessment area be a minimum of nine USGS quadrangles with the survey area located in the central quad. The scoping list also contains other taxa that may occur in the project area whose habitat is suitable if the project is within or near the known range of the species. The assessment

area was defined as the nine USGS 7.5' minute quadrangles centered around the Arcata South quadrangle (Tyee City, Arcata North, Blue Lake, Eureka, Korbel, Cannibal Island, Fields Landing, and McWhinney Creek USGS 7.5' quadrangles). The queries yielded 55 sensitive species previously documented in the assessment area. Due to the highly altered condition of the potential habitat contained within the PSB none of the plant species were thought to have a high probability of occurring within the study area. (Table 1, Attachment 2). Within the assessment area, three sensitive plant communities are documented according to the CNDDB (2018b).

Vegetation assessment or screening for ESHA occurring within the PSB began with research to determine what areas might be considered ESHA that may occur within the PSB. No comprehensive list of ESHA for the state, Humboldt County, or the City of Arcata exists. However, the CCC, County of Humboldt, and City of Arcata rely on the *Hierarchical list of Natural Communities* developed by the California Department of Fish and Wildlife (CDFG 2010) for guidance on what constitutes ESHA. The Hierarchical list of Natural Communities coincides with the classification system presented in *A Manual of California Vegetation Second Edition* (Sawyer et al. 2009) which defines vegetation communities based on a system of alliances. Natural communities are further broken down to association level for vegetation types affiliated with ecological sections in California. The Hierarchical list of Natural Communities also identifies Natural Communities as "high priority" based on global or state rarity rankings. CDFW tracks data on Natural Communities through the California Natural Diversity Database (CDFW 2018a). Thus, the initial analysis of whether ESHA might occur within the APE began with a review of CNDDB for the Arcata South USGS 7.5' quadrangles and eight adjacent quadrangles, as well as a review of community descriptions of potential Natural Communities as defined in *A Manual of California Vegetation Second Edition* (Sawyer et al. 2009).

The vegetation groupings discussed in this report are Alliances based on dominant characteristic plants whose presence was constant within the observed groupings. *A Manual of California Vegetation Second Edition* defines alliance as "A classification unit of vegetation, containing one or more associations and defined by one or more diagnostic species often of high cover, in the uppermost layer or the layers with the highest canopy cover" (Sawyer et al. 2009). The alliances described in *A Manual of California Vegetation* are the California expression of the National Vegetation Classification (CDFW 2017). The rankings for these communities are defined as follows according to the NatureServe's Heritage Program methodology defined for Natural Community Conservation Ranks and outlined in *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009).

- G3: 21-100 viable occurrences worldwide and/or more than 2,590-12,950 hectares;
- G4: Greater than 100 viable occurrences worldwide and/or greater than 12,950 hectares;
- G5: Demonstrably secure because of its worldwide abundance
- S3: 21-100 viable occurrences statewide and/or more than 2,590-12,950 hectares

3.3 Survey Procedures and Mapping Methods

Surveys to determine the presence of special status plant species (listed as rare, threatened, endangered, or candidate under the State or Federal Endangered Species Acts, CNPS, or species of local importance) were timed to coordinate with the blooming period for the majority of the species thought to possibly occur within the project area. After a review of the scoping list it was determined that two surveys, an early season survey and a late season survey, would be necessary to capture the blooming period for the majority of target species (species thought to have some potential to occur within the project area).

The surveys were floristic in nature following *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* by the California Natural Resource Agency (CDFW 2018c) and *General Rare Plant Survey Guidelines by the Endangered Species Recovery Program* (USFWS 2002). An intuitively controlled survey was conducted that sampled and identified potential habitat(s). Plants were identified to the lowest taxonomic level (genus or species) necessary for rare plant identification. Nomenclature follows *The Jepson Manual* (Baldwin et al 2012). Surveys were conducted by walking the site looking for the presence of target species and habitats identified on the scoping list, as well as presence of any other incidental sensitive-listed plant species. In total, approximately six field person hours were spent surveying the PSB specifically for special status plants over both the early season and late season survey dates.

Assessment of potential ESHA within the PSB was conducted by using the resources outlined above including identification of Sensitive community alliances as defined by the *Hierarchical list of Natural Communities* (CDFW 2018d) and by *A Manual of California Vegetation Second Edition* (Sawyer et al. 2009). Mapping of individual trees during the assessment of potential ESHA was completed with a GeoPro 6H global positioning system (GPS) receiver connected to a Motion F5v Tablet running ArcPad geographic information system (GIS) software.

4 Results

On June 18 and July 31, 2018 the PSB was surveyed in an effort to identify if federal, state and/or CNPS listed plant species are present. No special status species were observed during the protocol level surveys in 2018. Vegetation mapping to screen for Environmentally Sensitive Habitat Areas (ESHA) occurred on August 31, 2018 and September 20, 2018. Within the assessment area, three sensitive plant communities are documented according to the CNDDB, upland Douglas-fir forest, northern coastal salt marsh, and northern foredune grassland (CNDDB 2018b). None of these communities were observed within the PSB. Palustrine emergent persistent wetlands, palustrine broad-leaved deciduous scrub-shrub wetlands, and 1-parameter wetlands occur within the PSB. The 1-parameter wetlands meet the Coastal Commission requirements based on dominance of wetland (FAC or wetter) vegetation, in this case willows (*Salix* spp.). All wetlands occurring within the PSB and are addressed in a separate wetland delineation report (GHD 2018).

No sensitive vegetation alliances were identified within the PSB based on CDFW's Hierarchical List of Natural Communities (CDFW 2018d). Some individual redwood trees (*Sequoia sempervirens*) occur within the PSB. On the northern end of the PSB near the Buttermilk Road roundabout, there are a few young

redwood trees that appear to have been planted. North of Jacoby Creek School, between a fence line and the sidewalk, there are two mature redwood trees and a small (<5 ft. tall) sapling located between the two larger trees. The *Sequoia sempervirens* Forest Alliance has a Global listing of G3 and State Ranking of S3 (CDFW 2018d), None of the redwood trees within the PSB are connected to a forest and therefore they do not constitute a Forest Alliance. Redwood trees are not considered special-status plant species as individuals and are not considered ESHA. Figures showing the location of the redwood trees are provided in Figures 2:1-5.

5 Conclusion

The purpose of this survey was to identify and map special status plants within the project study boundary. No Special status plant species were observed within the PSB. No Critical Habitat for plants occurs within the project study boundary. Although individual redwood trees occur within the PSB, these individual trees do not constitute a forest community and are not considered Environmentally Sensitive Habitat Areas.

6 References

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Sawyer, J.O., T. Keeler-Wolf, and J.M. Evans. 2009. *A Manual of California Vegetation, Second Edition*. California Native Plant Society. Sacramento, CA.

USFWS 2002. General Rare Plant Survey Guidelines by the Endangered Species Recovery Program.

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Attachments

1. **Figures**

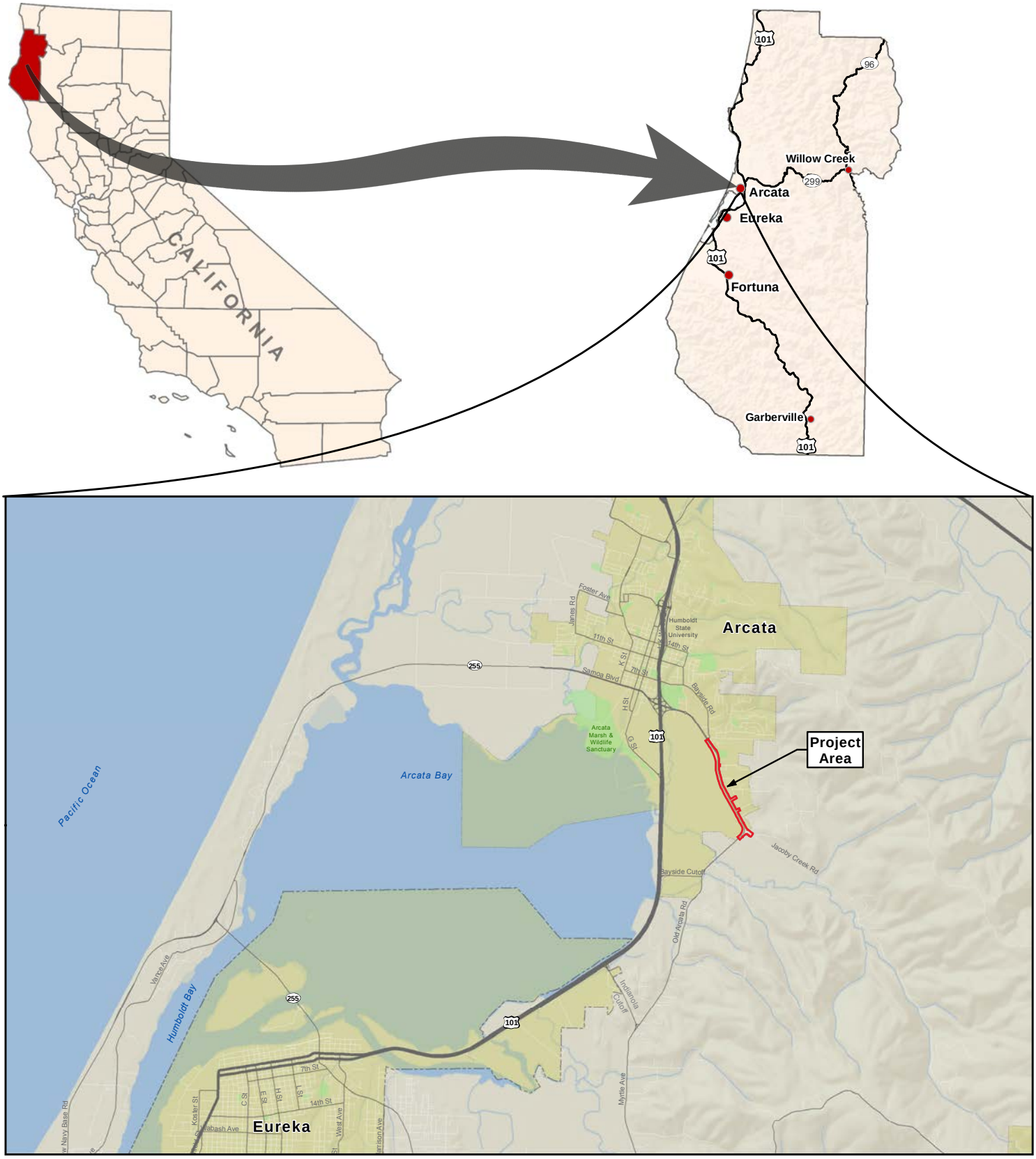
   Figure 1: Regional and Location Map

   Figure 2: ESHA Evaluation

2. **Tables**

   Table 1: Special status plant species with potential to occur in the PSB

   Table 2: Species list of plants observed within the PSB



City Limits

Project Area

Paper Size 8.5" x 11" (ANSI A)

0 0.5 1 1.5

Miles

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

N

GHD

City of Arcata
Old Arcata Road Improvements

Vicinity and
Project Location Map

Job Number 11159130
Revision A
Date 22 Aug 2018

Figure 1

G:\111\11159130 Arcata Old Arcata Road Improvements\08-GIS\Maps\Deliverables\11159130_01_Vicinity_RevA.mxd

718 Third Street Eureka CA 95501 USA T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

 Data source: ESRI terrain map; USA Streetmaps; City limits, City of Eureka; NAIP orthoimagery 2012. Created by:gldavidson

Paper Size ANSI B

0 25 50 75 100

Feet

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

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Print date: 08 Oct 2018 - 08:35

City of Arcata
Old Arcata Road Improvements

Special Status Plant Survey and Environmentally Sensitive Habitat Screening

Project No. 11159130
Revision No. A
Date 10/8/2018

FIGURE 2- 1

Data source: . Created by: gldavidson

Legend

- Project Study Boundary
- Individual Redwood Trees (non ESHA)

Paper Size ANSI B

0 25 50 75 100

Feet

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

N

GHD

City of Arcata
Old Arcata Road Improvements

Special Status Plant Survey and Environmentally Sensitive Habitat Screening

Project No. 11159130
Revision No. A
Date 10/8/2018

FIGURE 2- 2

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Print date: 08 Oct 2018 - 08:36

Data source: . Created by: gldavidson

Legend

Project Study Boundary

Individual Redwood Trees (non ESHA)

Paper Size ANSI B

0 25 50 75 100

Feet

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

N

GHD

City of Arcata
Old Arcata Road Improvements

Special Status Plant Survey and Environmentally Sensitive Habitat Screening

Project No. 11159130
Revision No. A
Date 10/8/2018

FIGURE 2- 3

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Print date: 08 Oct 2018 - 08:37

Data source: . Created by: gldavidson

Legend

- Project Study Boundary
- Individual Redwood Trees (non ESHA)

Paper Size ANSI B

0 25 50 75 100

Feet

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

GHD

City of Arcata
Old Arcata Road Improvements

Special Status Plant Survey and Environmentally Sensitive Habitat Screening

Project No. 11159130
Revision No. A
Date 10/8/2018

FIGURE 2- 4

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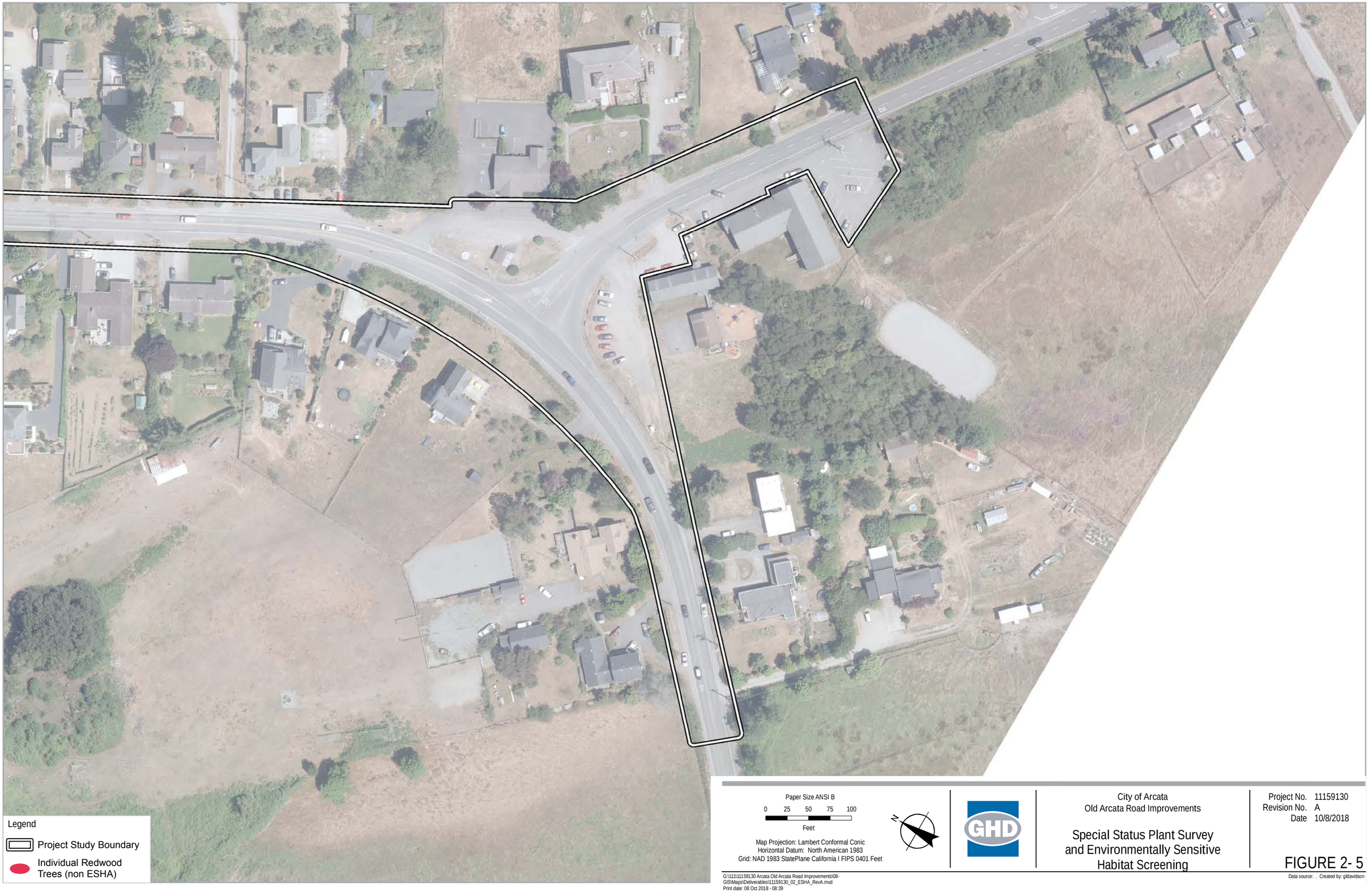
Print date: 08 Oct 2018 - 08:38

Data source: . Created by: gldavidson



Paper Size ANSI B

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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

City of Arcata
Old Arcata Road Improvements

Special Status Plant Survey and Environmentally Sensitive Habitat Screening

Project No. 11159130
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Date 10/8/2018

FIGURE 2- 5

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Print date: 08 Oct 2018 - 08:39

Data source: . Created by: gldavidson

Table 1 Special status plant species with potential to occur in the PSB

Taxa	Common Name	Listing Status	Typical Habitat	
Abronia umbellata var. breviflora	pink sand-verbena	1B.1	Coastal dunes	No Potential.
Angelica lucida	sea-watch	4.2	Coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps (coastal salt)	No Potential.
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	1B.2	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides)	No Potential.
Astragalus rattanii var. rattanii	Rattan's milk-vetch	4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	No Potential.
Astragalus umbraticus	Bald Mountain milk-vetch	2B.3	Cismontane woodland | Lower montane coniferous forest	No Potential.
Bryoria pseudocapillaris	false gray horsehair lichen	3.2	Coastal dunes (SLO Co.), North Coast coniferous forest (immediate coast)	No Potential.
Bryoria spiralifera	twisted horsehair lichen	1B.1	North Coast coniferous forest (immediate coast)	No Potential.
Cardamine angulata	seaside bittercress	2B.1	Lower montane & North coast (NC) coniferous forest | Wetland	No Potential.
Carex arcta	northern clustered sedge	2B.2	Bogs and fens, North Coast coniferous forest (mesic)	Low Potential.
Carex leptalea	bristle-stalked sedge	2B.2	Bog, fen, freshwater marsh, Wetland, swamp, Meadow & seep	Low Potential.
Carex lyngbyei	Lyngbye's sedge	2B.2	Marshes and swamps (brackish or freshwater)	Low Potential.

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Taxa	Common Name	Listing Status	Typical Habitat	
Carex praticola	northern meadow sedge	2B.2	Meadow & seep | Wetland	No Potential.
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	1B.2	Marsh & swamp | Salt marsh | Wetland	No Potential.
Castilleja littoralis	Oregon coast paintbrush	2B.2	Coastal bluff scrub | Coastal dunes | Coastal scrub	No Potential.
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	2B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub	No Potential.
Chrysosplenium glechomifolium	Pacific golden saxifrage	4.3	Streambanks, sometimes seeps, sometimes roadsides. NC coniferous forest. Riparian forest	Low Potential.
Collinsia corymbosa	round-headed Chinese-houses	1B.2	Coastal dunes	No Potential.
Coptis laciniata	Oregon goldthread	4.2	Meadow & seep | North coast coniferous forest | Wetland	No Potential.
Epilobium oreganum	Oregon fireweed	1B.2	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	No Potential.
Epilobium septentrionale	Humboldt County fuchsia	4.3	Broadleafed upland forest, North Coast coniferous forest	No Potential.
Erysimum menziesii	Menzies wallflower	FE, SE, 1B.1	Coastal dunes	No Potential.
Erythronium oregonum	giant fawn lily	2B.2	Cismontane woodland, Meadows and seeps	No Potential.
Erythronium revolutum	coast fawn lily	2B.2	Bog & fen | broadleaved upland forest | North Coast coniferous | Wetland	No Potential.

Taxa	Common Name	Listing Status	Typical Habitat	
Fissidens pauperculus	minute pocket moss	1B.2	North Coast coniferous forest (damp coastal soil)	No Potential.
Gilia capitata ssp. pacifica	Pacific gilia	1B.2	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland	No Potential.
Gilia millefoliata	dark-eyed gilia	1B.2	Coastal dunes	No Potential.
Glehnia littoralis ssp. leiocarpa	American glehnia	4.2	Coastal dunes	No Potential.
Hesperevax sparsiflora var. brevifolia	short-leaved evax	1B.2	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie	No Potential.
Iliamna latibracteata	California globe mallow	1B.2	Chaparral | Lower montane coniferous forest | North coast coniferous forest | Riparian scrub	No Potential.
Lasthenia californica ssp. macrantha	perennial goldfields	1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub	No Potential.
Lathyrus japonicus	seaside pea	2B.1	Coastal dunes	No Potential.
Lathyrus palustris	marsh pea	2B.2	Bog, fen, marsh, swamp | coastal prairie & scrub | lower montane & NC coniferous forest	Low Potential.
Layia carnosa	beach layia	FE, SE, 1B.1	Coastal dunes | coastal scrub	No Potential.
Lilium occidentale	Western lily	FE, SE, 1B.1	Bogs and fens, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps (freshwater), North Coast coniferous forest (openings)	No Potential.

Taxa	Common Name	Listing Status	Typical Habitat	
Lilium kelloggii	Kellogg's lily	4.3	Lower montane coniferous forest, North Coast coniferous forest	No Potential.
Listera cordata	heart-leaved twayblade	4.2	Bogs and fens | lower montane & NC coniferous forest	Low Potential.
Lycopodium clavatum	running-pine	4.1	Lower montane & NC coniferous forest | marsh & swamp	No Potential.
Mitellastra caulescens	leafy-stemmed mitrewort	4.2	Broadleaved upland forest | lower montane & NC coniferous forest | meadow & seep	Low Potential.
Monotropa uniflora	ghost-pipe	2B.2	Broadleaved upland forest | NC coniferous forest	No Potential.
Montia howellii	Howell's montia	2B.2	Meadow, seep, wetland & vernal pool | NC coniferous	No Potential.
Noccaea fendleri ssp. californica	Kneeland Prairie pennycress	FE, 1B.1	Coastal prairie (serpentinite)	No Potential.
Oenothera wolfii	Wolf's evening-primrose	1B.1	Coastal bluff scrub | coastal dunes | coastal prairie	No Potential.
Packera bolanderi var. bolanderi	seacoast ragwort	2B.2	Coastal scrub, North Coast coniferous forest	No Potential.
Piperia candida	white-flowered rein orchid	1B.2	Broadleaved upland forest | Lower montane coniferous forest | North coast coniferous forest | Ultramafic	No Potential.
Pityopus californicus	California pinefoot	4.2	Mesic. Broadleafed upland forest. Lower montane/Upper montane / NC coniferous forest	No Potential.
Pleuropogon refractus	nodding semaphore grass	4.2	Mesic. Lower montane & NC coniferous forest. Meadows and seeps. Riparian	Low Potential.
Ribes laxiflorum	trailing black currant	4.3	Sometimes roadside. NC coniferous forest	No Potential.

Taxa	Common Name	Listing Status	Typical Habitat	
Sidalcea malachroides	maple-leaved checkerbloom	4.2	Broadleaved upland forest | coastal prairie & scrub | NC coniferous & riparian forest	No Potetial.
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	1B.2	Coastal bluff scrub | Coastal prairie | North coast coniferous forest	No Potential.
Sidalcea oregana ssp. eximia	coast checkerbloom	1B.2	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	No Potential.
Spergularia canadensis var. occidentalis	western sand-spurrey	2B.1	Marshes and swamps (coastal salt)	No Potential.
Tiarella trifoliata var. trifoliata	trifoliate laceflower	3.2	Lower montane coniferous forest, North Coast coniferous forest	No Potential.
Trichodon cylindricus	cylindrical trichodon	2B.2	Broadleaved upland forest | upper montane coniferous forest	No Potential.
Usnea longissima	long-beard lichen	4.2	Broadleaved upland forest | north coast coniferous forest | old growth | redwood	No Potential.
Viola palustris	alpine marsh violet	2B.2	Bogs and fens (coastal), Coastal scrub (mesic)	Low Potential.
Terrestrial Communities				
Upland Douglas-Fir Forest		None	North coast coniferous forest	Not Present.
Northern Coastal Salt Marsh		None	Marsh & swamp | wetland	Not Present.
Northern Foredune Grassland		None	Coastal dunes	Not Present.

Source: CNDDB and CNPS accessed 6/1/18. Assessment area consists of USGS 7.5 minute quadrangles: Tyee City, Arcata North, Blue Lake, Eureka, Arcata South, Korbel, Fields Landing, McWhinney Creek, Cannibal Island

Note: small font size in table above denotes List 3 or 4 plant species which are provided herein for informational purposes

Taxa	Common Name	Listing Status	Typical Habitat	
FEDERAL--U.S. Fish and Wildlife Service (USFWS)				
FE - Federal Endangered				
FT - Federal Threatened				
FC - Federal Candidate for listing				
FSC - United States Fish and Wildlife Service Federal Species of Special Concern				
STATE--California Department of Fish and Wildlife (CDFW)				
SE - State Endangered				
ST - State Threatened				
SR – State Rare				
CSC - CDFW Species of Special Concern				
SLC - Species of Local Concern				
CFP - California Fully Protected Species				
California Native Plant Society Rare Plant Ranks (CRPR)				
1A- Presumed Extirpated in California and either Rare or extinct elsewhere				
1B - Rare, Threatened, or Endangered in California and elsewhere				
2 - Rare, Threatened or Endangered in California, but more common elsewhere				
2A- Plants Presumed Extirpated in California, but more common elsewhere				
2B- Plants Rare, Threatened, or Endangered in California, but more common elsewhere				
3 - Review List (more information needed)				
4 - Watch List (limited distribution in California)				
Threat Ranks:				
_0.1 Seriously threatened in California				
_0.2 Moderately threatened in California				
0.3 Not very threatened in California				

POTENTIAL TO OCCUR	
No Potential	Habitat on and adjacent to the site 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 on the site.
Moderate Potential	Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
High Potential	All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Table 2 Species list of plants observed within the PSB by GHD

Scientific Name	Common Name
Agrostis stolonifera	*creeping bent*
Alnus rubra	red alder
Anthoxanthum odoratum	sweet vernal grass
Arctotheca sp.	cape weed
Arrhenatherum elatius	tall oatgrass
Athyrium filix-femina	common ladyfern
Avena sp.	oats
Baccharis pilularis	coyote brush
Bellis perennis	English daisey
Brassica nigra	black mustard
Briza minor	annual quacking grass
Bromus carinatus	California brome
Bromus hordeaceus	soft chess brome
Buddleja sp.	butterfly bush
Carex obnupta	slough sedge
Carpobrotus edulis	iceplant
Cerastium glomeratum	mouse-eared chickweed
Conium maculatum	poison hemlock
Corylus cornuta var. californica	California hazelnut
Cotoneaster sp.	contoneaster
Cyperus eragrostis	tall nutsedge
Dactylis glomerata	orchard grass
Daucus carota	queen ann's lace
Dipsacus fullonum	wild teasel
Epilobium ciliatum	
Equisetum arvense	common horsetail
Equisetum telmateia subsp. braunii	giant horsetail
Eschscholzia californica	California poppy
Festuca arundinacea	tall fescue
Festuca perennis	meadow fescue
Foeniculum vulgare	fennel
Frangula purshiana subsp. purshiana	cascara
Galium aparine	goose grass
Geranium dissectum	
Geranium molle	cranesbill
Glyceria x occidentalis	western manna grass

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Scientific Name	Common Name
Hedera helix	English ivy
Helminthotheca echioides	bristly ox-tongue
Holcus lanatus	velvet grass
Hordeum marinum subsp. gussoneanum	
Hypochaeris radicata	rough cats-ear
Juncus effusus	common rush
Juncus hesperius	coast or bog rush
Juncus patens	spreading rush
Lapsana communis	common nipplewort
Lathyrus vestitus	common pacific pea
Leucanthemum vulgare	ox-eye daisy
Linum bienne	
Lonicera involucrata	twinberry
Lotus corniculatus	bird's-foot trefoil
Lychnis coronaria	rose campion
Lysimachia arvensis	scarlet pimpernel
Lythrum hyssopifolia	hyssop loosestrife
Malus sp.	
Matricaria discoidea	pineapple weed
Medicago polymorpha	California burclover
Mentha pulegium	pennyroyal
Nasturtium officinale	water cress
Oenanthe sarmentosa	
Parentucellia viscosa	yellow glandweed
Phleum pratense	common timothy
Pinus contorta subsp. contorta	shore pine
Pinus radiata	Monterey pine
Plantago lanceolata	English plantain
Plantago major	common plantain
Poa annua	annual blue grass
Poa pratensis ssp. pratensis	Kentucky blue grass
Polystichum munitum	western sword fern
Prunella vulgare	selfheal
Ranunculus repens	creeping buttercup
Raphanus sativus	radish
Rosa sp.	
Rubus armeniacus	Himalayan blackberry
Rubus ursinus	California blackberry

Scientific Name	Common Name
Rumex acetosella	common sheep sorrel
Rumex crispus	curly dock
Salix lasiandra var. *lasiandra*	Pacific willow
Salix hookeriana	coastal willow
Salix sp.	willow
Scirpus microcarpus	bulrush
Senecio minimus	coastal burnweed
Sequoia sempervirens	redwood
Sonchus sp.	sow thistle
Spiraea douglasii	Douglas spirea
Stachys ajugoides	hedge-nettle
Stachys chamissonis	
Symphyotrichum chilensis	Pacific aster
Tragopogon dubius	goat's beard
Trifolium dubium	little hop clover
Trifolium fragiferum	strawberry clover
Typha sp.	cattail
Veronica sp.	
Vicia sativa subsp. nigra	
Vicia tetrasperma	four seeded vetch
Vicia villosa ssp. varia	smooth vetch
Vinca major	greater periwinkle

Source: Old Arcata Road botanical survey dates – June 18, 2018 and July 31, 2018 (GHD botanist Amy Livingston)

Appendix D – Wetland Delineation Report

City of Arcata

Old Arcata Road Proposed Project

Wetland Delineation Report

January 2019

Table of contents

Attachments

1. Introduction

On behalf of the City of Arcata, GHD prepared this wetland delineation report, and accompanying appendices (figures and data sheets), in support of the proposed road improvement project along Old Arcata Road. This report supports the project's environmental documentation, permitting, and construction planning as deemed appropriate. The proposed project includes Old Arcata Road and adjacent roadsides through the community of Bayside, between the intersections with Buttermilk Road and Jacoby Creek Road, as well as short sections of adjacent roads and roadsides (Figure 1). This report is subject to, and must be read in conjunction with, the limitations set out in Section 5, Special Terms and Conditions, and the assumptions and qualifications contained throughout the Report.

The wetland delineation fieldwork was conducted by GHD on August 28 and 29, and September 20, 2018 at the request of and under contract with the City of Arcata. The delineation was conducted within the Project Study Boundary (PSB), as shown on Figure 2:1-5. The Coastal Zone boundary is located along Old Arcata Road throughout the extent of the PSB. Given the possibility that the Coastal Commission will claim jurisdiction of the entire Old Arcata Road right-of-way, the extent of wetland-type vegetation (based on one parameter) was mapped in accordance with the California Coastal Commission requirements. The extent of wetlands having wetland-type vegetation, hydric soils, and wetland hydrology (based on three parameters) per the U.S. Army Corps of Engineers (USACE) was also mapped. The City of Arcata requires that only two of the USACE parameters occur in order to define a wetland, however no 2-parameter wetlands were identified.

The wetland delineation determined that two types of presumed USACE jurisdictional wetlands occur within the PSB, Palustrine Emergent Persistent Wetlands and Palustrine Broad-leaved Deciduous Scrub-Shrub Wetlands. The PSB also contains 1-parameter wetlands meeting Coastal Commission requirements based only on wetland (FAC or wetter) vegetation. These wetlands were mapped at dripline, based on the dominant native vegetation as 1-Parameter Willow Series. Figures presenting results of the 2018 investigation are provided in Appendix A. Data sheets documenting conditions observed during the 2018 investigation are included in Appendix B.

2. Methodology

2.1 Wetland delineation approach

The wetland delineation was conducted by a GHD botanist and soil scientist. The wetlands occurring within the road median, southwest of Old Arcata Road, on the northern side of the PSB, were also reviewed by a GHD senior Certified Professional Wetland and Certified Professional Soil Scientist. To define a wetland, the USACE requires that all three parameters (vegetation, soil, and hydrology) show wetland attributes (USACE 1987; USACE 2010). The City of Arcata requires that only two parameters are present in order to define a wetland. The California Coastal Commission requires only one parameter to be present in order to define the site as a wetland (14 CCR 13577). The wetland delineation used USACE criteria from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (USACE 2010). The current standard forms provided by the USACE (2010) were used for botany/soils/hydrology data collection.

Vegetation and soil data were collected at transects across the upland/wetland boundary with two plots (upland/wetland) per transect. The naming convention used on data sheets to designate upland or wetland plots associated with a transect was –U or –W, respectively. The wetland/upland boundary was recorded with a GPS device, individual wetland and upland plots were not. The distance to the wetland/upland boundary from the individual wetland and upland plots was recorded on each respective datasheet.

Intermediate GPS points were collected without the collection of data (soils, vegetation, or hydrology) as appropriate, and are shown without labels on the figures. In addition to the paired transect plots, one wetland test pit and one upland test pit were described that were not part of paired transects. These were labeled “WTP7” or “UTP8” respectively. In the case of the wetland test pit “WTP7”, a paired upland test pit was not dug due to the presence of underground utilities. The upland test pit “UTP8” was completed to confirm the presence of 1-parameter wetland based of vegetation, and the lack of soil and hydrology indicators.

During the delineation mapping, each section of wetland was designated with a number e.g. “W1”. Wetland transects were labeled with a respective wetland number. Some wetland sections were mapped from intermediate points only, with no transects completed for these sections. For this reason, two wetland identification numbers are missing from the sequence of the transect datasheets (3 and 4). In addition, GHD revisited the road median on the northeast side of the PSB, which is why in contains non-sequential transects. All data collected during the delineation is included in Appendix B.

Field mapping of 1-parameter and 3-parameter wetlands was completed with a GeoPro 6H global positioning system (GPS) receiver with sub-meter accuracy, connected to a Motion F5v Tablet running ArcPad geographic information system (GIS) software on August 28 and August 29, 2018. Field mapping on September 20, 2018 was completed with a Trimble GeoExplorer GPS unit with sub-meter accuracy running ArcPad (GIS) software with a Trimble Tornado antenna. Data was post-processed using GPS Pathfinder office which referenced UNAVCO base stations. The points were then connected using ArcGIS for map preparation.

2.2 Botanical methodology

Vegetation data collection consisted of listing the dominant species in the herbaceous, shrub, and tree layer within a standard sized plot depending on layer. The species listed for each plot were classified as to whether or not they were wetland or upland indicators, using the standard reference for plant wetlands indicators: *State of California 2016 Wetland Plant List* (Lichvar et al. 2016). Plants were classified based on the probability that they would be found in wetlands (USACE 1987), ranging from Obligate (almost always in wetlands) [OBL], Facultative/wet (67% to 99% in wetlands) [FACW], Facultative (34% to 66% in wetlands) [FAC], Facultative/up (1% to 33% in wetlands) [FACU], or Uplands (less than 1% in wetlands) [UP]. Plants not listed in the manual were considered to be in the upland category (Lichvar et al. 2016). Standard procedures for documenting hydrophytic vegetation indicators were used per the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual (*USACE 2010).

2.3 Soils methodology

The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual (*USACE 2010) procedures were combined with the Natural Resources Conservation Service’s (NRCS) definition of hydric soils presented in Field Indicators of Hydric Soils in the United States (USDA/NRCS 2016).

Soil pits were dug to an approximate depth of 16 inches. Data on soil color, texture and redoximorphic features were collected. Any observed redoximorphic features (iron concentrations) were noted along with their percentage within the soil matrix, and care was taken to distinguish chromas of 1 and 2 indicative of an iron-depleted soil within 12 inches of the soil surface (USACE 2010; USDA/NRCS 2016).

Colors were described for the entire depth of the test pit and colors were determined on moist natural soil aggregate (ped) surfaces, which had not been crushed, using the Munsell Color Chart (COLOR, M. 2000). Soils with low chromas were verified as being hydric or upland with Field Indicators of Hydric Soils in the United States (Version 8.0, 2016).

2.4 Hydrology methodology

The delineation was performed in late August and September, towards the end of the dry season. Although some standing water was observed in a few sections of roadside ditch, near the PSB and also outside of the PSB on the northeast side of Old Arcata Road, standing water was not present in wetland test pits which were dug closer to the wetland boundary. In general, two secondary indicators were identified to meet the wetland hydrology parameter per the USACE criteria.

3. Results

The PSB consists of two types of presumed USACE jurisdictional wetlands that were classified using Cowardin nomenclature from *Classification of Wetlands and Deepwater Habitats of the United States* (Federal Geographic Data Committee 2013), Palustrine Emergent Persistent Wetlands and Palustrine Broad-leaved Deciduous Scrub-Shrub Wetlands. The PSB also contains 1-parameter wetlands meeting Coastal Commission requirements based only on wetland (FAC or wetter) vegetation. These wetlands were mapped based on dominant native vegetation as 1-Parameter Willow Series. The 1-Parameter Willow Series was mapped to the willow canopy dripline. Areas where the canopy extends over pavement were also mapped. No 2-parameter wetlands were identified. Figure 2:1-5 in Appendix A shows the results of the wetland delineation. In Summary, 0.158 acres of 3-parameter Palustrine Emergent Persistent Wetlands, 0.239 acres of 3-parameter Palustrine Broad-leaved Deciduous Scrub-Shrub Wetlands, and 0.082 acres of 1-Parameter Willow Series were identified within the PSB (not including the area where the willow canopy dripline extended over pavement).

The Palustrine Emergent Persistent Wetland and the Palustrine Scrub-Shrub, Broad leaved Deciduous Wetlands occurred primarily within roadside ditches along the northeast side of Old Aracta Road. The Palustrine Emergent Persistent Wetland consisted primarily of an herbaceous layer and the Palustrine Scrub-Shrub, Broad leaved Deciduous Wetlands consisted of tree, shrub, and herbaceous vegetation layers. Willow species (*Salix* spp.) were the dominant trees in the shrub-scrub wetlands often occurring with Himalayan blackberry (*Rubus armeniacus*) and California blackberry (*Rubus ursinus*) in the shrub layer. Hydrophytic vegetation was dominant within all wetland areas.

The majority of upland plots also contained hydrophytic vegetation, dominated by non-native, invasive grass species such as tall fescue (*Festuca arundinacea* synonym: *Schedonorus arundinaceus*), creeping bent (*Agrostis stolonifera*), and velvet grass (*Holcus lanatus*) all of which are rated as facultative species. It is likely that roadside mowing is favoring these invasive grass species. As defined by Lichvar (2016) facultative species have a 36% to 66% probability of

occurring in wetlands, making these species statistically equally likely to occur in wetlands or uplands. Field inspections to determine the presence of hydric soil conditions and/or wetland hydrology can alleviate potential technical misinterpretation of facultative species. Considering that wetland hydrology and hydric soils were not present in the upland plots, and given that these non-native species are favored by disturbance and are located in the mowed roadside corridor, we determined these species are not growing as hydrophytes and are not 1-parameter wetlands.

Soils in the delineated wetlands were generally silt loam, silty clay loam, and silty clay in texture containing various amounts of gravel. An exception to this is the road median area on the north side of the PSB which is discussed separately. Wetland soils exhibited redoximorphic features typically found in hydric soils including low chromas with redoximorphic (iron concentrations) at or above 10 inches from the soil surface. Representative wetland (hydric) soils had matrix colors of 2.5YR 3/1, 2.5YR 4/1, 2.5Y 4/1, 2.5Y 2/1, with iron concentrations of 10 YR 5/6 and 7.5 Y 4/6. The hydric soil indicators observed included redox dark surface (F6) and depleted matrix (F3).

Representative upland soils were generally silty loam, silty clay loam, or silt clay. Representative upland soils had matrix colors of 2.5Y 3/3, 2.5Y 4/3. Upland soil colors were with either no redoximorphic features observed, or very small percentages of redox features observed and thus the soils did not meet field indicators for hydric soils.

The delineation was performed in late August and September of 2018 at the end of the dry season. No water was observed in the test pits. The most frequent secondary indicators of hydrology observed were geomorphic position and passing the FAC-neutral test.

The road median on the northern side of the PSB contained a drainage ditch that parallels Old Arcata Road with a smaller drainage ditch perpendicular to the longer one. Soils were disturbed and most likely human placed, and contained a high percentage of gravel. The vegetation had recently been cut and the ground was covered with straw. Within this road median two, 3-Parameter Palustrine Emergent Wetlands were mapped, and one, 1-Parameter Willow Series wetland was mapped based on the dominance of hydrophytic vegetation.

4. Conclusions

The wetland delineation completed in August and September of 2018 for the proposed project determined the extent of wetlands based on wetland-type vegetation, hydric soils, and wetland hydrology (three parameter approach). The area of investigation was determined to consist of two types of 3-parameter wetlands. The delineation also determined the extent of 1-parameter wetlands based only on wetland (FAC or wetter) vegetation, based on the Coastal Commission definition. No 2-parameter wetlands were identified. The wetland delineation results are provided in map format in Appendix A. The field data sheets from the delineation area are included in Appendix B.

5. Special Terms and Conditions

5.1 Purpose of this Report

This report has been prepared by GHD for the City of Arcata and may only be used and relied on by the City of Arcata for the purpose agreed upon between GHD and the City of Arcata as set out in the scope and contract for work effort reported herein. GHD Inc. is not liable for any action arising out of the reliance of any third party on the information contained within this report. GHD otherwise

disclaims responsibility to any person other than City of Arcata arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

5.1 Scope and Limitations

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

To achieve the delineation objectives stated in this report, conclusions of the delineation were based on the information available during the period of the investigation, which took place on August 28 and August 29, 2018 and September 20, 2018. The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed by the date of preparation of the report. Site conditions may change after the date of this report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change, unless contracted to do so.

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 information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points. Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

6. References

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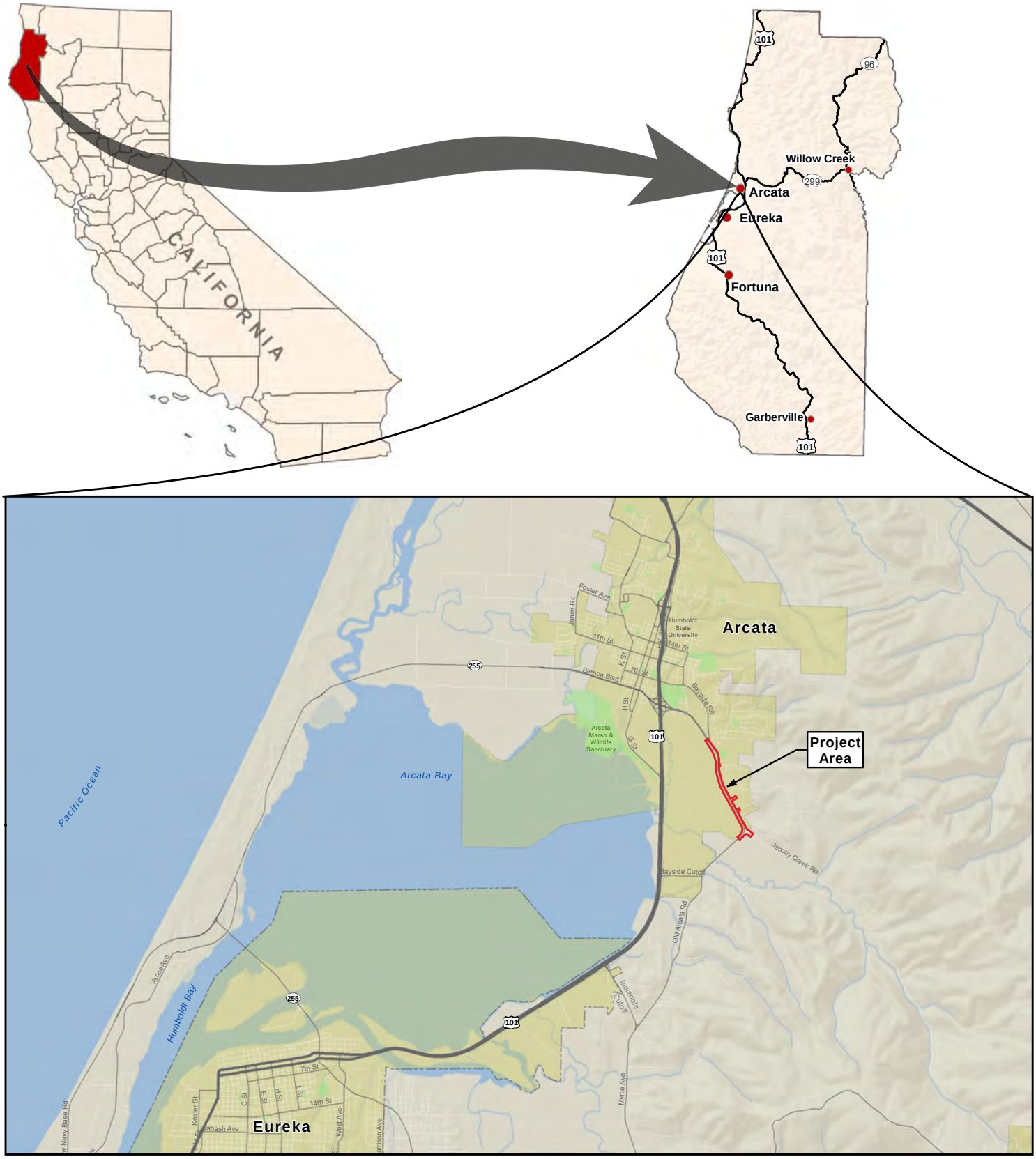
Appendices

Appendix A – Figures



City Limits

Project Area

Paper Size 8.5" x 11" (ANSI A)
0 0.5 1 1.5
Miles
Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

City of Arcata
Old Arcata Road Improvements

Vicinity and
Project Location Map

Job Number 11159130
Revision A
Date 03 Oct 2018

Figure 1

718 Third Street Eureka CA 95501 USA T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

G:\111\11159130 Arcata Old Arcata Road Improvements\08-GIS\Maps\Deliverables\11159130_01_Vicinity_RevA.mxd

Legend

- Project Study Boundary

Wetland Survey

- CC upland test pit
- USACE wetland test pit
- USACE wetland transect point
- Intermediate Point
- Upland Ditch
- 1-Parameter Willow Series, Dripline
- 1-Parameter Willow Series, Dripline over Pavement
- Palustrine Emergent Persistent 3-Parameter Wetland
- Palustrine Scrub-Shrub 3-Parameter Wetland Broad leaved Deciduous

Paper Size ANSI B

0 25 50 75 100

Feet

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

G:\11\11115913 0 Arcata Old Arcata Road Improvements\08-GIS\Maps\Deliverables\11159130_02_WetDelin_RevD.mxd
Print date: 04 Oct 2018 - 16:01

City of Arcata
Old Arcata Road Improvements

Wetland Delineation

Project No. 11159130
Revision No. D
Date 10/4/2018

FIGURE 2- 1

Data source: . Created by: gldavidson

Legend

- Project Study Boundary

Wetland Survey

- CC upland test pit
- USACE wetland test pit
- USACE wetland transect point
- Intermediate Point
- Upland Ditch
- 1-Parameter Willow Series, Dripline
- 1-Parameter Willow Series, Dripline over Pavement
- Palustrine Emergent Persistent 3-Parameter Wetland
- Palustrine Scrub-Shrub 3-Parameter Wetland Broad leaved Deciduous

Paper Size ANSI B

0 25 50 75 100

Feet

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

N

GHD

City of Arcata
Old Arcata Road Improvements

Wetland Delineation

Project No. 11159130
Revision No. D
Date 10/4/2018

FIGURE 2- 2

G:\111\11159130 Arcata Old Arcata Road Improvements\08-GIS\Maps\Deliverables\11159130_02_WetDelin_RevD.mxd
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Data source: . Created by: gldavidson

Legend

- Project Study Boundary

Wetland Survey

- CC upland test pit
- USACE wetland test pit
- USACE wetland transect point
- Intermediate Point
- Upland Ditch
- 1-Parameter Willow Series, Dripline
- 1-Parameter Willow Series, Dripline over Pavement
- Palustrine Emergent Persistent 3-Parameter Wetland
- Palustrine Scrub-Shrub 3-Parameter Wetland Broad leaved Deciduous

Paper Size ANSI B

0 25 50 75 100

Feet

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

N

GHD

City of Arcata
Old Arcata Road Improvements

Wetland Delineation

Project No. 11159130
Revision No. D
Date 10/4/2018

FIGURE 2- 3

G:\11\11159130 Arcata Old Arcata Road Improvements\08-GIS\Maps\Deliverables\11159130_02_WetDelin_RevD.mxd
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Data source: . Created by: gldavidson

Legend

- Project Study Boundary

Wetland Survey

- CC upland test pit
- USACE wetland test pit
- USACE wetland transect point
- Intermediate Point
- Upland Ditch
- 1-Parameter Willow Series, Dripline
- 1-Parameter Willow Series, Dripline over Pavement
- Palustrine Emergent Persistent 3-Parameter Wetland
- Palustrine Scrub-Shrub 3-Parameter Wetland Broad leaved Deciduous

Paper Size ANSI B

0 25 50 75 100

Feet

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

N

GHD

City of Arcata
Old Arcata Road Improvements

Wetland Delineation

Project No. 11159130
Revision No. D
Date 10/4/2018

FIGURE 2- 4

G:\111\11159130 Arcata Old Arcata Road Improvements\08-GIS\Maps\Deliverables\11159130_02_WetDelin_RevD.mxd
Print date: 04 Oct 2018 - 16:04

Data source: . Created by: gldavidson

Legend

- Project Study Boundary
- **Wetland Survey**
- CC upland test pit
- USACE wetland test pit
- USACE wetland transect point
- Intermediate Point
- Upland Ditch
- 1-Parameter Willow Series, Dripline
- 1-Parameter Willow Series, Dripline over Pavement
- Palustrine Emergent Persistent 3-Parameter Wetland
- Palustrine Scrub-Shrub 3-Parameter Wetland Broad leaved Deciduous

Paper Size ANSI B

0 25 50 75 100

Feet

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

N

GHD

City of Arcata
Old Arcata Road Improvements

Wetland Delineation

Project No. 11159130
Revision No. D
Date 10/4/2018

FIGURE 2- 5

G:\11\11159130 Arcata Old Arcata Road Improvements\08-GIS\Maps\Deliverables\11159130_02_WetDelin_RevD.mxd
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Data source: . Created by: gldavidson

Appendix B – Data Sheets

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

Project/Site: Old Arcata Road City/County: Arcata / Humboldt Sampling Date: 8/28/18

Applicant/Owner: City of Arcata State: CA Sampling Point: W1-T1-W

Investigator(s): A.L., M.T Section, Township, Range:

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

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

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

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

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

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

Remarks: Vegetation is mowed. Veg plot is rectangular to match narrow roadside ditch (8' x 2' 6") Wetland soil pit is 2 1/2 feet from mapped wetland boundary.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size)			
1			
2			
3			
4			
	= Total Cover		
Sapling/Shrub Stratum (Plot size)			
1			
2			
3			
4			
5			
	= Total Cover		
Herb Stratum (Plot size 8' x 2' 6")			
1 Ranunculus repens	15		FAC
2 Festuca arundinacea	30	X	FAC
3 Nasturtium officinale	7		OBL
4 Cyperus eragrostis	5		FACW
5 Hypochaeris radicata	3		FACU
6 Rubus armeniacus	2		FAC
7 Agrostis stolonifera	35	X	FAC
8			
9			
10			
11			
	97 = Total Cover		48.5 / 19.4
Woody Vine Stratum (Plot size)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum ~3%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No

Remarks: Rubus armeniacus included in herbaceous Stratum since less than 5% Cover for shrub layer. Plot is w/in a road side ditch.

SOIL

Sampling Point: WI-T1-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	2.5Y 3/1	100		100	C	M	SILT/LOAM	MEDGRAVEL <15
6-12"	2.5Y 4/1	85%	10YR 5/6	15	C	M	SILT/CLAY	SM < 10
12-16"	2.5Y 3/1	80	10YR 5/6	20	C	M	SILT/CLAY	SM GRAVEL <5

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NONE

Depth (inches): GRAVEL @ 4" BGS

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDRIC SOILS PRESENT DUE TO LOW CHROMA VALUES (3/1, 4/1) AND REDOX SOILS BELOW 6" GROUND SURFACE.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

THREE SECONDARY INDICATORS MET:

(D2) - GEOMORPHIC POSITION - DITCH LOCATION

(D5) - FAC-NEUTRAL TEST PASSED.

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

Project/Site: Old Arcata Rd City/County: Arcata/ Humboldt Sampling Date: 8/28/18
Applicant/Owner: City of Arcata State: CA Sampling Point: W1-T1-U
Investigator(s): A.L., M.T Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: From. Mapped transect point, distance to upland pit is 2'.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 20' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1 → Pinus radiata * likely planted	25%	X	NL (UPL)
2			
3			
4			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size 7' radius)			
1			
2			
3			
4			
5			
	___	= Total Cover	
Herb Stratum (Plot size: See note)			
1 Festuca arundinacea	15		FAC
2 Lotus corniculatus	10		FAC
3 Hypochaeris radicata	20	X	FACU
4 Prunella vulgaris	5		FACU
5 Agrostis stolonifera	35	X	FAC
6 Ranunculus repens	15		FAC
7			
8			
9			
10			
11			
	100	= Total Cover	
Woody Vine Stratum (Plot size ___)			
1			
2			
	___	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: Upland herbaceous plot is a 5' radius on uphill side and to sides of pit, does not include wetland side since plot is so close to boundary.

SOIL

Sampling Point: W1-TI-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	2.5Y 3/3	100			C	M	Silt Loam	VEGETATION MATCH
6-11"	2.5Y 4/3	98	10YR 5/6	2%	C	M	Silt Loam	
11-16"	2.5Y 4/4	95	7.5YR 5/6	5%	C	M	Silt Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NONE

Depth (inches): NONE

Hydric Soil Present? Yes ____ No ✓

Remarks:

DOES NOT MEET HYDRIC SOIL INDICATORS

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No ✓

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

NONE

Remarks:

UPLAND, NO HYDROLOGY INDICATORS MET.

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

Project/Site: Old Arcata Rd City/County: Arcata/Humboldt Sampling Date: 8/28/18
Applicant/Owner: City of Arcata State: CA Sampling Point: W2T2-W
Investigator(s): A.L. and M.T. Section Township Range:
Landform (hillslope terrace etc.): Local relief (concave convex none): Concave Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Vegetation plots were radial plots facing away from wetland/upland boundary, towards

VEGETATION – Use scientific names of plants.

Wetland plot is 5½ feet away from mapped point for wetland T2

Tree Stratum (Plot size 15' Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1 Salix hookeriana	95%	X	FACW
2			
3			
4			
	95% = Total Cover		
Sapling/Shrub Stratum (Plot size 12')			
1 Rubus armeniacus	50%	X	FAC
2			
3			
4			
5			
	50% = Total Cover		
Herb Stratum (Plot size 5')			
1 Ranunculus repens	3%	X	FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
	3 = Total Cover		
Woody Vine Stratum (Plot size ____)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum: (97% covered by very sparse due to branches and small wood duff and small wood)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

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

Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Herbaceous cover is very sparse due to branches and small wood on ground and dense canopy from willows and Himalayan blackberry.

SOIL

Sampling Point: W2-T2-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	2.5Y 2/1	100			O	M	SILTY-CLAY LOAM	VEGETATIVE MATTER
6"-12"	2.5Y 3/1	95	10YR 4/6	5	C	M	SILT LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NONE

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

- 10YR CHROMA VALUES (2/1, 3/1) CONSISTED WITH REDOXIMORPHIC SOILS.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5) 2.0
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

NA

Remarks:

MET ONE PRIMARY INDICATORS - & TWO SECONDARY INDICATORS

B6 - SURFACE CRACKS

D2 - GEOMORPHIC POSITION

C3 - OXIDIZED RHIZOSPHERES ALONG LIVING ROOTS

D5 - FAC NEUTRAL TEST PASSED

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

Project/Site Old Arcata City/County _____ Sampling Date 8/28/18

Applicant/Owner _____ State _____ Sampling Point W2-T2-U

Investigator(s) A.L., M.T. Section, Township, Range _____

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

Subregion (LRR) _____ Lat _____ Long _____ Datum _____

Soil Map Unit Name _____ NWI classification _____

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

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

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

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

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

Remarks: Plot is 6' away from mapped boundary of Wetland 2.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size _____)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size 10')			
1 Rubus ursinus	10	X	FACU
2 Rubus armeniacus	20	X	FAC
3			
4			
5			
	30 = Total Cover		15%
Herb Stratum (Plot size 5')			
1 Agrostis stolonifera	50	X	FAC
2 Festuca perennis	5		FAC
3 Ranunculus repens	7		FAC
4 Holcus lanatus	20	X	FAC
5 Geranium dissectum	3		NL (UPL)
6 Lapsana communis	7		FACU
7 Equisetum telmatia	3		FACW
8			
9			
10			
11			
	95 = Total Cover		47.5
Woody Vine Stratum (Plot size _____)			19
1			
2			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Radial plot facing away from wetland. Mowed area probably contributes to dominance by Holcus lanatus + Agrostis stolonifera. RUBARM is invasive and dominant along roadsides.

SOIL

Sampling Point: W2 - T2 - U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1 - 8"	2.5Y 3/2	100%					SILT LOAM	25% SU ORANGE
8" - 16"	2.5Y 4/2	100%					SILT LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NONE

Depth (inches): NONE

Hydric Soil Present? Yes ____ No ✓

Remarks:

HIGH CHROMA, NO REDOX SOILS INDICATE UPLAND.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks: NO SIGNS OF SURFACE HYDROLOGY OR INDICATORS MET

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

Project/Site: Old Arcata Rd | City/County: Arcata / Humboldt | Sampling Date: 8/28/18
Applicant/Owner: City of Arcata | State: CA | Sampling Point: WST1-W
Investigator(s): A.L., M.T. | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): Concave | Slope (%):
Subregion (LRR): | Lat: | Long: | Datum:
Soil Map Unit Name: | NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Soil pit dug within the freshly dug ditch. Vegetation has been scraped away during excavation. Area covered in rice straw. Herbaceous plot 7'

VEGETATION – Use scientific names of plants. radial plot to encompass more veg. Veg is mowed

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size)			
1			
2			
3			
4			
	= Total Cover		
Sapling/Shrub Stratum (Plot size)			
1			
2			
3			
4			
5			
	= Total Cover		
Herb Stratum (Plot size 7')			
1 Stachys ajugoides	5		OBL
2 Ranunculus repens	15	X	FAC
3 Juncus effusus	20	X	FACW
4 Lotus corniculatus	10		FAC
5 Anthoxanthum odoratum	15	X	FACU
6 Festuca perenne	10		FAC
7 Cyperus eragrostis	5		FACW
8			
9			
10			
11			
	80 = Total Cover		
Woody Vine Stratum (Plot size)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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

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

Hydrophytic Vegetation Present? Yes X No

Remarks: In general area veg cover low due to recent mowing + application of rice straw. Large plot used to pick up more veg.

SOIL

Sampling Point: WS-TP-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	2.5Y 4/1	98	10YR 5/6	3	C	M	Silt-clay loam	>20% Chroma 1
6-10"	2.5Y 4/2	100			C	M	Clay-loam	<15% "
10-14"	5Y 4/1	100			C	M	Clay loam	<15% "

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ✓ No ___

Remarks:

GRAVEL & HAY AT SURFACE, HYDRIC SOIL INDICATOR (F3) - DEPLETED MATRIX AND REDOX SOIL W/IN 6" BGS.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5) 3:1
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

U- PIT LOCATION AT PERIMETER OF MAINTAINED DITCH. HYDRO MET TWO SECONDARY INDICATORS -D2 - GEOMORPHIC POSITION

- D5 - FAC NEUTRAL TEST PASSED.

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

Project/Site: Old Arcata Road | City/County: Arcata, Humboldt | Sampling Date: 8/29/18
Applicant/Owner: City of Arcata | State: CA | Sampling Point: WDST1-U
Investigator(s): A.L., M.T. | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):
Subregion (LRR): | Lat: | Long: | Datum:
Soil Map Unit Name: | NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Upland plot is located outside of area excavated for ditch. Soil is covered w/ straw and there is almost no remaining vegetation from excavation work.

VEGETATION – Use scientific names of plants. Very disturbed vegetation makes plant ID and cover estimates very difficult.

Tree Stratum (Plot size)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	= Total Cover		
Sapling/Shrub Stratum (Plot size 3m x 2m)			
1 Rubus armeniacus	1%	X	FAC
2			
3			
4			
5			
	1% = Total Cover		
Herb Stratum (Plot size 3m x 2m)			
1 Ranunculus repens	1%	X	FAC
2 Anthoxanthum odoratum	1%	X	FACU
3 Juncus effusus	3%	X	FACW
4 Holcus lanatus	1%	X	FAC
5 Helminotheca echioides	1%	X	FAC
6 Cyperus eragrostis	1%	X	FAC
7			
8			
9			
10			
11			
	8 = Total Cover		4
Woody Vine Stratum (Plot size)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 86% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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

Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks: Rectangular herbaceous plot 3m x 1m around upland soil pit. Fill material has been deposited on soil surface from excavation of ditch. Very low total veg cover. No hydrology or soil indicators.

Wetland boundary is 1' as mapped from upland pit. Did not map rest of wetland based on distance from pit.

SOIL

Sampling Point: WS-T1-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9"	2.5Y 3/3	100			C	M	gravelly silt loam	MILD VEGETATION & SURFACE
9-16"	10YR 3/3	98	10YR 5/6	2	C	M	very gravelly loam-silt	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NV

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

INCREASE IN ORANGE CONCENTRATIONS AT 10" BGS.

THOUGH SOME REDOX SOILS ≤ 2% AT 9" BGS, NOT SUFFICIENT FOR HYDRIC SOIL.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

NONE

Remarks:

NO HYDROLOGY EVIDENCE AT TIME OF DELINEATION.

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

Project/Site: Old Arcata Road | City/County: Arcata, Humboldt | Sampling Date: 8/29/18
Applicant/Owner: City of Arcata | State: CA | Sampling Point: WST2-W
Investigator(s): A.L, M.T. | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):
Subregion (LRR): | Lat: | Long: | Datum:
Soil Map Unit Name: | NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Area has been mowed recently and covered in lots of straw. There is very little vegetation present and mowing complicates describing plots.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size ____)			
1			
2			
3			
4			
	= Total Cover		
Sapling/Shrub Stratum (Plot size ____)			
1			
2			
3			
4			
5			
	= Total Cover		
Herb Stratum (Plot size 5x2m, rectangle)			
1 Cyperus eragrostis	3	X	FAC
2 Festuca arundinacea	6	X	FAC
3 Ranunculus repens	1		FAC
4 Juncus effusus	2		FACW
5 Rubus ursinus	1		FACU
6			
7			
8			
9			
10			
11			
	13 = Total Cover		6.5/2.6
Woody Vine Stratum (Plot size ____)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0*
__ 4 - Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants*
__ Problematic Hydrophytic Vegetation* (Explain)
*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Rubus ursinus included in herbaceous stratum since less than 5%. Wetland pit is 2' from mapped wetland boundary.

SOIL

Sampling Point: WS-T2-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	2.5Y 4/1	90	10YR 5/6	10	C	M	gravelly - silty clay loam w/ mix	
6" - 14"	2.5Y 3/1	95	10YR 5/6	5	C	PL	gravelly silty clay loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NONE

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

F3. Depleted Matrix due to low chroma & value of 4 or less.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

- Topographic depressions indicate drainage hydrology patterns.

Two secondary hydrology indicators met:

(B10) - visible drainage patterns

(D2) - geomorphic position adjacent to swale.

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

Project/Site: Old Arcata Road City/County: Arcata, Humboldt Sampling Date: 8/29/18
Applicant/Owner: City of Arcata State: CA Sampling Point: WST2-U
Investigator(s): A. Livingston and M. Tolley Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat.: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Vegetation is very sparse. It has been mowed and is mostly covered with rice straw. Mowing of vegetation on this road side is and likely favors dominance of tall fescue.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size 4m x 2m)			
1. Festuca arundinacea	20	X	FAC
2. Cyperus eragrostis	5		FAC
3. Trifolium fragiferum	3		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	28 = Total Cover		14/5.6
Woody Vine Stratum (Plot size ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Upland pit is 2' from mapped wetland boundary. Although tall fescue is dominant, Trifolium fragiferum (FACU) present in plot and becomes more dominant farther into upland. Vegetation is disturbed and sparse.

SOIL

Sampling Point: WS-T2-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	2.5 y 4/3	100					GRAVELLY	SILTY LOAM
6-14"	2.5 y 3/3	100					VERY GRAVELLY	SILTY LOAM

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Uplands 7.7. High Chroma (3)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Uplands, NO HYDRO INDICATORS MET.

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

Project/Site: Old Arcata Road | City/County: Arcata, Humboldt | Sampling Date: 8/29/18
Applicant/Owner: City of Arcata | State: CA | Sampling Point: WS-T3-W
Investigator(s): A L, M.T. | Section, Township, Range:
Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): Concave | Slope (%):
Subregion (LRR): | Lat: | Long: | Datum:
Soil Map Unit Name: | NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Excavated ditch covered w/ rice straw and mowed vegetation complicate describing veg plot. Unsure of willow species between S. scouleriana (FAC) or S. sitchensis (FACW)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 6m x 3m rectangle)	Absolute % Cover	Dominant Species?	Indicator Status
1 Salix sp. (likely either S. scouleriana or S. sitchensis)	30%	X	FAC or FACW
2			
3			
4			
	= Total Cover		

Sapling/Shrub Stratum (Plot size)			
1			
2 Included in herbaceous plot due to <5% cover			
3			
4			
5			
	2% = Total Cover		

Herb Stratum (Plot size rectangle 3m x 1m)			
1 Holcus lanatus	3%	X	FAC
2 Rubus armeniacus	2%	X	FAC
3			
4			
5			
6			
7			
8			
9			
10			
11			
	5% = Total Cover		

Woody Vine Stratum (Plot size)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic

Hydrophytic Vegetation Present? Yes X No

Remarks: Very little herbaceous veg because of [redacted] mowing and fresh rice straw.

SOIL

Sampling Point: WS-T3-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	2.5Y 3/1	95	10YR 5/6	5	C	M		gravelly
6-10"	2.5Y 3/2	95%	7.5YR 4/6	5%	C	M		" "
10-16"	2.5Y 4/2	98%	7.5YR 4/6	2%	C	M		" "

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (If present):

Type: NONE

Depth (inches): NA

Hydric Soil Present? Yes ✓ No ___

Remarks:

CHROMA OF 2 OR LESS 10" bgs. EVIDENCE OF REDOX SOILS UP TO 16" BGS.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

HYDROLOGY | TWO SECONDARY INDICATORS MET.

(D2) - GEOMORPHIC POSITION AS THIS WAS ADJACENT TO MAN MADE DITCH

(D5) - PASSED FAC NEUTRAL TEST.

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

Project/Site: Old Arcata Road City/County: Arcata, Humboldt Sampling Date: 8/29/18
Applicant/Owner: City of Arcata State: CA Sampling Point: WS-T3-U
Investigator(s): A.L., M.T. Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Site is mowed which likely promotes the dominance of Velvet grass here which is invasive and FAC status. Rice straw and mowing contribute to sparse veg. Cover.

VEGETATION – Use scientific names of plants. Four other FACU or UPL species present in herb stratu

Tree Stratum (Plot size)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2			
3			
4			
	= Total Cover		
Sapling/Shrub Stratum (Plot size)			
1			
2			
3			
4			
5			
	= Total Cover		
Herb Stratum (Plot size 6m x 2m)			
1 Holcus lanatus	30	X	FAC
2 Rubus armeniacus	2		FACW
3 Rubus ursinus	2		FACU
4 Plantago lanceolata	1		FACU
5 Vicia sativa ssp. nigra	1		UPL
6 Ranunculus repens	2		FAC
7 Anthoxanthum odoratum	10	X	FACU
8			
9			
10			
11			
	48 = Total Cover		24 / 9.6
Woody Vine Stratum (Plot size)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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

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

Hydrophytic Vegetation Present? Yes X No

Remarks: Shrubs included in herbaceous strata since less than 5% for shrub layer.

SOIL

Sampling Point: US - T3U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	2.5Y 3/3	100	—	—	C	M	VERY GRAVELLY SILTY-CLAY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NONE

Depth (inches): NONE

Hydric Soil Present? Yes ___ No ✓

Remarks:

NO EVIDENCE OF REDOX CONDITIONS, PRIMARILY MIXED FILL W/ SOME DEBRIS - SOME VEGETATION ROOTS W/IN TOP 4" BGS.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

NONE

Remarks:

NO EVIDENCE OF HYDROLOGY ASSOC W/ WETLAND

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

Project/Site: Old Arcata Road City/County: Arcata, Humboldt Sampling Date: 9/20/18

Applicant/Owner: City of Arcata State: CA Sampling Point: W6T1-W

Investigator(s): A.L., M.T. Section, Township, Range:

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

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

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

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

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

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

Remarks: Wetland 6 is roadside ditch. Dominant overystory vegetation are willows between this transect and Buttermilk Lane

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: Radial 3m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	85%	X	FACW
2.			
3.			
4.			
	85% = Total Cover		
Sapling/Shrub Stratum (Plot size: 2m)			
1. Rubus armeniacus	25%	X	FAC
2. Rubus ursinus	15%	X	FACU
3.			
4.			
5.			
	40% = Total Cover		
Herb Stratum (Plot size: 2m)			
1. Juncus effusus	15%	X	FACW
2. Oenanthe sarmentosa	20%	X	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35% = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No

Remarks: Wetland veg plots are radial plots facing toward wetland, not including upland side. Soil test pit is 1 ft west from mapped transect point.

SOIL

Sampling Point: W6-T1-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	2.5Y 3/1	100			C	M	SILT	VEGETATION MATTER
2"-6"	2.5Y 2/1	100					SILT-LOAM	INCREASE IN SOIL CONT.
6"-12"	2.5Y 2/1	95	7.5Y 4/6	5			GRAVELLY SILT LOAM	INCREASE IN GRAVEL CONT.
12"-16"	2.5Y 2/1	92	7.5Y 4/6	8			" 1/1 SAND	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ✓ No ___

Remarks:

- FG CONDITIONS MET W/ MATRIX VALUE OF 3 OR LESS & CHROMA VALUE 2 OR LESS AND 5% DISTINCT REDOX CONCENTRATIONS

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5) 3:1
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

NA

Remarks:

MET THREE SECONDARY INDICATORS:

- B10 - DRAINAGE PATTERNS
- D5 - FAC NEUTRAL TEST PASSED
- D2 - GEOMORPHIC POSITION

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

Project/Site: Old Arcata Road City/County: Arcata, Humboldt Sampling Date: 9/20/18

Applicant/Owner: City of Arcata State: CA Sampling Point: W6T1-U

Investigator(s): Section, Township, Range:

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

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

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

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

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

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

Remarks: This roadside is frequently mowed, likely promoting the dominance of velvet grass. Rubus ursinus which is invasive and rated FAC, lumped in herbaceous layer because cover is < 5%.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1			
2			
3			
4			
5			
	= Total Cover		
Herb Stratum (Plot size: Rectangle 6'x4')			
1 Rumex acetosella	15		FACU
2 Holcus lanatus	70	X	FAC
3 Scirpus microcarpus	3		OBL
4 Anthoxanthum odoratum	2		FACU
5 Rubus ursinus	3		FAC
6			
7			
8			
9			
10			
11			
	96 = Total Cover		
Woody Vine Stratum (Plot size:)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum:

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No

Remarks: Upland soil test pit is ~1 ft from mapped boundary of W6T1 point. Veg plot is rectangle which includes soil test pit. Rectangular pit extends to edge of pavement.

SOIL

Sampling Point: W6-TP-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7"	2.5Y 3/3	100					Silt Loam	VEGE MATTER
3-6"	2.5Y 4/3	100					GRAVELLY SILT LOAM	
6-16"	2.5Y 5/2	100					VG Silt-Loam.	- INC IN GRAVEL CONC

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NONE

Depth (inches): NA

Hydric Soil Present? Yes ____ No ✓

Remarks

LIGHT VALUE & CHROMA. SEEN IN SOILS. NO REDOX OBSERVED. NO SIGNS OF HYDRIC SOILS.

- FILL SOILS W/ VEGETATION THROUGH TOP 2" BGS.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No ✓

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

NONE KNOWN.

Remarks:

TEST PIT LOCATION DOES NOT MEET WETLAND HYDROLOGY INDICATIONS. (PRIMARY OR SECONDARY)

- UPLAND HYDROLOGY W/ FILL SOILS.

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

Project/Site: Old Arcata Road City/County: Arcata / Humboldt Sampling Date: 9/20/18
Applicant/Owner: City of Eureka State: CA Sampling Point: WTP 7
Investigator(s): Amy Livingston and Matt Tulley Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Not doing paired transect due to proximity to underground utilities. Wetland test pit to assess 3 parameters. WTP is 6' 8" from mapped wetland boundary

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size 3m)	Absolute % Cover	Dominant Species?	Indicator Status
1 Alnus rubra	65%	X	FAC
2			
3			
4			
	65% = Total Cover		
Sapling/Shrub Stratum (Plot size 1.5 m)			
1 Rubus ursinus	5%	X	FACU
2 Rubus armeniacus	3%	X	FAC
3			
4			
5			
	8 = Total Cover		
Herb Stratum (Plot size 1.5 m)			
1 Equisetum telmateia	45	X	FACW
2 Holcus lanatus	50	X	FAC
3 Avena sp	3		
4			
5			
6			
7			
8			
9			
10			
11			
	98% = Total Cover		
Woody Vine Stratum (Plot size)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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

*Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic

Hydrophytic Vegetation Present? Yes X No

Remarks
* Site was visited at the end of the dry season when it is most difficult to observe direct evidence of wetland hydrology. See remarks under hydrology section.

SOIL

Sampling Point: WTP-7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	2.5Y 2.5/1	100			C	M	Silty loam	C HIGH ORGANIC MATTER
4"-9"	2.5Y 2.5/1	98	10YR 5/6	2	C	M	Silty clay loam	
9"-16	2.5Y 3/1	95	10YR 5/6	5	C	M	" silt loam "	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ✓ No ___

Remarks:

MATRIX VALUE OF 3 OR LESS, CHROMA OF 1 OR LESS, AND 2% OR MORE DISTINCT REDOX CONCENTRATIONS.

* NOTE: NOT DIGGING UPLAND PIT DUE TO UNDERGROUND UTILITIES (electrical lines).

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ___ No ___ MARGINAL X

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

Remarks:

ONLY 1 SECONDARY WETLAND HYDROLOGY INDICATOR MET.

-(D2) - GEOMORPHIC POSITION INDICATOR MET..

Tie on the FAC-Neutral Test. Assuming wetland hydrology indicator is met during wet season.

Site was visited near the end of the dry season.

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

Project/Site: Old Arcata Road City/County: Arcata, Humboldt Sampling Date: 9/20/18
Applicant/Owner: City of Arcata State: CA Sampling Point: U-TP-8
Investigator(s): A Livingston and M. Talley Section Township Range:
Landform (hillslope terrace etc.): _____ Local relief (concave convex none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____ or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Not by 3 parameter definition

Remarks: Vegetation is recently mowed and covered with rice straw complicating the description of veg plots. Herbaceous plot consists of all recently mowed veg

VEGETATION – Use scientific names of plants: *1 parameter Coastal Commissin wetland based on veg.

Tree Stratum (Plot size 3m radial plot)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sp. (suspect either	70%	X	FAC or FACW
2. S. scouleriana (FAC) or S. sitchensis (FACW)			
3.			
4.			
	70% = Total Cover		

Sapling/Shrub Stratum (Plot size _____)

none

1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size 2m radial plot)

1. Festuca arundinacea	5		FAC
2. Juncus effusus	10		FACW
3. Holcus lanatus	65	X	FAC
4. Anthoxanthum odoratum	10		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		48/18

Woody Vine Stratum (Plot size _____)

1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0
__ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants
__ Problematic Hydrophytic Vegetation (Explain)
Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Radial plots documenting vegetation to side of main ditch that is dug in upland (did not include upland side)

SOIL

Sampling Point: UTP-8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	2.5Y 3/3	100			C	M	Silty Clay Loam	ORGANIC MATTER
2"-8"	2.5Y 4/1	100					Silt Loam	
8"-13"	2.5Y 4/2	100					GRAVELLY Silt Loam	
13"-16"	2.5Y 4/2	100					VERY GRAVELLY Silt Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ___ No ✓

Remarks:

- DOES NOT MEET ANY HYDRIC SOIL INDICATORS. NO EVIDENCE OF REDOX SOILS. EVEN WITH LAT CHROMA.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

NO EVIDENCE OF WETLAND HYDROLOGY

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

Project Site: Old Arcata Road | City/County: Arcata, Humboldt | Sampling Date: 9/20/18
Applicant/Owner: City of Arcata | State: CA | Sampling Point: WLT1-W
Investigator(s): A.L., M.T. | Section Township Range:
Landform (hillslope terrace etc.): | Local relief (concave, convex, none): Concave | Slope (%):
Subregion (LRR): | Lat: | Long: | Datum:
Soil Map Unit Name: | NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size ____)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2 None			
3			
4			
	= Total Cover		
Sapling/Shrub Stratum (Plot size ____)			
1			
2			
3 None			
4			
5			
	= Total Cover		
Herb Stratum (Plot size Rectangle in ditch 5' x 1')			
1 Lythrum hyssopifolium	70	X	OBL
2 Lotus corniculatus	15	X	FAC
3 Convolvulus?	2		?
4 Rubus ursinus	2		FACU
5 Helminthotheca echioides	2		FAC
6			
7			
8			
9			
10			
11			
	91 = Total Cover		
Woody Vine Stratum (Plot size ____)			
1			
2			
	= Total Cover		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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

*Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks
Soil Pit dug in the narrow, existing ditch. Veg plot is a rectangle within ditch. Ditch is narrow, wetland boundary is edge of ditch.

SOIL

Sampling Point: W9-TI-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	7.5Y 3/1	98	10YR 5/6	2	C	M	Silt Loam	
4-8"	2.5Y 2/1	95	10YR 5/6	5			GRAVELLY SILT LOAM	
8-16"	2.5Y 2/1	85	2.5YR 3/6	15			SILTY CLAY LOAM	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ✓ No ___

Remarks:

- EVIDENCE OF REDOXIMORPHIC SOILS. MATRIX VALUE OF 3 OR LESS & LOW CHROMA VALUES.
- EVIDENCE OF SOIL MOISTURE AT 6" bgs.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5) 1:0
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

NA

Remarks:

PRIMARY

2 HYDROLOGY INDICATORS MET, INCLUDING TWO SECONDARY INDICATORS MET

A2 - HIGH WATER TABLE

A3 - SATURATION

- D2 - GEOMORPHIC POSITION
- D5 - FAC NEUTRAL TEST PASSED.

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

Project/Site: Old Arcata Road City/County: Arcata, Humboldt Sampling Date: 9/20/18
Applicant/Owner: City of Arcata State: CA Sampling Point: W9T1-U
Investigator(s): A.L., M.T. Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Vegetation is mowed. Plot is in a road median. Mowing likely favors tall fescue and perennial rye grass which are dominant in herbaceous plot. Other FACU species are present.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size)			
1			
2			
3			
4			
5			
	= Total Cover		
Herb Stratum (Plot size)			
1 Festuca arundinacea	25	X	FAC
2 Rumex acetosella	3		FACU
3 Plantago lanceolata	2		FACU
4 Rubus ursinus	2		FACU
5 Holcus lanatus	10		FAC
6 Symphotrichum chilense	5		FAC
7 Festuca perenne	20	X	FAC
8 Raphanus sativus	3		UPL
9 Anthoxanthum odoratum	7		FACU
10 Daucus carota	2		FACU
11			
	79 = Total Cover		5/158
Woody Vine Stratum (Plot size)			
1			
2			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic

Hydrophytic Vegetation Present? Yes X No

Remarks: Veg plot is rectangular pit facing upland. Mowed vegetation complicates cover estimations

SOIL

Sampling Point: W9-T1-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	2.5Y 3/2	100	ø				Silt Clay	
4-10"	2.5Y 3/3	100					Gravelly Silt Clay	
10-16"	2.5Y 4/1	100					Gravelly Silt Clay Loam.	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ___ No ✓

Remarks:

- Low CHROMA & VALUES THAT'LL NO EVIDENCE OF REDOXMORPHIC SOILS.
- Fill soil
- INCREASE IN GRAVEL SIZE AT DEPTH (4") bgs.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

NA

Remarks:

NONE.

NO PRIMARY OR SECONDARY INDICATORS MET.

GHD

718 Third Street
Eureka, California 95501

T: 707.443.8326 F: 707.444.8330 E: info@ghd.com

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Appendix C
Historic Resources Report

OLD ARCATA ROAD IMPROVEMENTS PROJECT
HUMBOLDT COUNTY

HISTORIC RESOURCES REPORT

Prepared For:

City of Arcata
Community Services Department
736 F Street
Arcata, CA 95521

Prepared By:

JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

February 2020

Table of Contents

1 Historical Resources Identification

1.1 Introduction

JRP Historical Consulting, LLC (JRP) prepared this Historic Resources Report for the City of Arcata's Old Arcata Road Improvements Project. The purpose of this report is to assist with project compliance under the California Environmental Quality Act (CEQA). The City is proposing roadway improvements on Old Arcata Road, including a roundabout, at the intersection with Jacoby Creek Road in the Bayside area. See Section 2.1 for the project description. The report provides an assessment regarding identification of known and potential historical resources, as defined in CEQA Guidelines 15064.5(a), and the analysis of potential impacts to historical resources, as per CEQA Guidelines 15064.5(b).

To prepare this report, JRP examined standard sources of information that identify known and potential historic resources to ascertain whether any buildings, structures, objects, districts, or sites have been previously recorded or evaluated in or near the project study area. This included reviewing the California Historical Landmarks and Points of Interest publications and updates, National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) listings, and the California Historical Resources Information System list for Humboldt County. JRP also reviewed documentation that the City provided, including the Historic Property Survey Report (HPSR) that William Rich & Associates (WRA) prepared in November 2019, as well as public comments the City received about the project. This included the results for this project of the California Historical Resources Information System records search from the Northwest Information Center that were provided in the HPSR.[1]

Seven historic-era resources have been identified along the project route. These properties were viewed digitally via Google Earth for this report. JRP did not conduct a field survey, but is generally familiar with the area.

Part 1 of this report provides the identification of seven built environment properties that are known or potential historical resources, as per CEQA Guidelines Section 15064.5. These properties are:

- Old Jacoby Creek School / Bayside School (P-12-003771) was listed in the NRHP in 1985 (NPS-85000353-0000), and as such it is listed in the California Register of Historical Resources (CRHR);
- Bayside Grange Hall (P-12-003770), now called the Bayside Community Hall, was listed in the CRHR in 2002;

[1] National Park Service, National Register Information System, online database: http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome (accessed December 2019); Northwest Information Center, IC File #18-0841, October 26, 2018.

- Four of the built environment resources were considered in the HPSR as eligible for the NRHP for purpose of this project, as follows (from east to west):
    - Charles Monahan-Dexter House / former Bayside Post Office (P-12-003658)
    - Nellist-Zucar-Smith House
    - David Oscar Nellist House (P-12-003661)
    - Rhodes-Marsh House & Trinidad Water Tower Complex (P-12-003681);
- Former Bayside Community Hall - directly west of the Bayside Grange Hall, now called the Mistwood Educational Center. This building is assumed eligible as a historical resource for the purposes of this report.

JRP did not evaluate or re-evaluate any of these seven properties under NRHP or CRHR criteria.

There do not appear to be any other historical resources along the project route that would be impacted. None are listed in the sources reviewed, and JRP examined the project area and reviewed historic mapping and aerial photographs, noting that Old Arcata Road was lined with many buildings during the early twentieth century that are now mostly gone and that buildings along much of the project route are relatively new or renovated. As discussed herein, changes to the area along the project route, including the addition of modern buildings, diminishes Bayside's ability to be a historic district. The HPSR noted that in addition to the seven properties listed above approximately 44 other buildings along the project route were not evaluated. It appears that these buildings were not studied because of the low potential for them to be affected by the project. WRA also indicated that these other properties lack potential historic significance because "although this community has its roots in an historical agrarian past," Bayside reflects a "subsequent post war housing boom and considerable infill."[2]

Part 2 of this report provides analysis regarding project impacts to the seven known and potential historical resources. This includes analysis regarding impacts to their historic integrity and project compliance with the *Secretary of Interior's Standards for the Treatment of Historic Properties*.

JRP Principal Christopher McMorris (M.S., Historic Preservation, Columbia University) prepared this Historical Resources Report. Mr. McMorris has 21 years of experience and specializes in conducting historic resource studies for compliance with CEQA and Section 106 of the National Historic Preservation Act, as well as other historic preservation projects. He has served as a lead historian, principal investigator, and project manager on projects for federal, state, and local government, as well as for engineering/environmental consulting firms. Many of these projects have involved inventory and evaluation of historic resources under the criteria for the NRHP /

[2] William Rich and Associates, "Historic Property Survey Report for the Old Arcata Road Improvements Project (Federal Project # RPSTPL – 5021(023)) Bayside, Humboldt County, California," November 2019, Summary of Identification Efforts, 4.

CRHR, along with analysis of effects projects may have on historic properties and measures to mitigate those effects. Mr. McMorris' experience also includes documentation of historic properties under the Historic American Building Survey (HABS) and Historic American Engineering Record (HAER) programs. Based on his level of education and experience, Mr. McMorris meets and exceeds the United States Secretary of the Interior's Professional Qualification Standards under History and Architectural History (as defined in 36 CFR Part 61).

Research Assistant Angela Rothman (M.A., Public History, Loyola University Chicago) assisted in research and preparation of this report.

1.2 Building and Property Descriptions

The seven known and potential historical resources located along the project route are in the City of Arcata or the unincorporated community of Bayside, approximately seven miles northeast of Eureka in Humboldt County. The buildings are individually owned, and all, but one, are located on north and east of Old Arcata Road, with two located along Jacoby Creek Road. They were built between 1882 and 1940 in varying architectural styles. Prior to the mid-twentieth century, the intersection of Old Arcata Road and Jacoby Creek Road was almost a T-junction that was immediately adjacent to the former Bayside Community Hall (now Mistwood Educational Center). The portion of the road proceeding to the southwest from this intersection was also referred to as Myrtle Avenue. During the early twentieth century a railroad line crossed this intersection headed from an area inland along Jacoby Creek to Humboldt Bay. This intersection was altered into a curve located to the southwest of the original intersection. This created space for the roadway and island in front of the current post office, as well as the parking area in front of Mistwood Educational Center. The City proposes to construct a roundabout in this area where the T-junction was altered to a curve.[3]

In addition to the NRHP nomination for the Old Jacoby Creek School / Bayside School and CRHR listing of the Bayside Grange, noted above, five of the resources were recorded and described in Eric Hedlund's report number S-014557, "An Historic Resources Inventory: The Old Arcata Road-Myrtle Avenue Corridor," prepared for the Humboldt County Department of Public Works, Natural Resources Division in 1978 and attached to the HSPR. Although Hedlund does not give equal descriptive treatment to each property, he indicates some of their character-defining features. It is not known whether Hedlund documented the Bayside Grange and the

[3] Fairchild Aerial Surveys, Flight C-19180, Frame 3-55, 1:180,000, June 3-23, 1953, available at http://mil.library.ucsb.edu/ap_indexes/FrameFinder/ (accessed January 2020); US Geological Survey (USGS), Arcata South, Calif., 1:24,000, Washington, D.C.: USGS, 1959; US Geological Survey (USGS), Eureka, Calif., 1:48,000, Washington, D.C.: USGS, 1933; US Geological Survey (USGS), Eureka, Calif., 1:62500, Washington, D.C.: USGS, 1942 (revised 1948); US Geological Survey (USGS), Eureka, Calif., 1:62500, Washington, D.C.: USGS, 1951; US Army Corps of Engineers, Eureka, Calif., 1:62500, Washington, D.C.: US Army, 1922.

Bayside Community Hall, because several pages of Hedlund's report are nonextant.[4] Historian Susie Van Kirk inventoried the Bayside Community Hall (now Mistwood Educational Center) in 1979 in report number S-49179, "Historical Setting and Significant Structures, Jacoby Creek Sewer Project."[5]

Although none of the previously prepared historic resources documentation reviewed for this report identified views from those properties as historically significant, JRP's assessment of the following known and potential historical resources examined the general setting of each and the features that could be considered character defining.

1.2.1 Old Jacoby Creek School / Bayside School, 2212 Jacoby Creek Road

The Old Jacoby Creek School / Bayside School was listed in the NRHP in 1985 (NPS-85000353-0000). Located at 2212 Jacoby Creek Road (**Photograph 1**), it was built in 1903 by W.G. Mohn.[6] Historian Susie Van Kirk prepared the nomination and the school was determined eligible under Criteria A and C at the local level for its associations with the development of the Bayside area, as well as for its unique transitional architecture in Humboldt County. The period of significance is 1903-1957, the latter date being the opening of a new school building. The property boundary is defined by its historic parcel. Van Kirk notes that changes to the rear wall on the north corner took place in the 1960s and that the owners had intended to replace the front steps, which were missing at that time. Desktop review confirms that those steps have been added to the building since its listing.

The character-defining features of the Old Jacoby Creek School / Bayside School are not clearly identified in the NRHP nomination form, although there are features noted within the description of the building, and the property's transitional architectural style is emphasized as part of the building's significance. During the desktop review, JRP noted the characteristic features of the property. The building is set back from the property line and Jacoby Creek Road. This landscaped set back is considered part of the property's character-defining features. The specific elements of this area of the property are not. The front of the parcel is bounded by fencing and trees (as Van Kirk notes), and the front yard is separated from the driveway by a hedge. The property includes a parking area located on the parcel south of the building, and there is a wide area used for parking along Jacoby Creek Road. This latter parking area, partially on the building's front lawn, appears to be located within the road right of way. Review of

[4] It is possible that these resources appear on the maps in Hedlund's appendix as sites 8-35 and 8-36. These numbers appear in the same locations as the existing resources.

[5] Like the Bayside Grange Hall, the Bayside Community Hall is also labelled P-12-003770. This inconsistency, with an accompanying photograph of the building in 1979, is explained in the 2018 Metadata Sheet from the Northwest Information Center (included in the HSPR).

[6] Susie Van Kirk, "Old Jacoby Creek School," National Register of Historic Places Inventory-Nomination Form, February 28, 1985.

aerial photography indicates that the extant trees and parking areas appear to have been added since the early 1950s and that an older large tree east of the driveway was removed. In recent decades, some trees lining Jacoby Creek Road at this property appear to have also been removed and there are currently multiple trees located at the west corner of the property by the post office.[7]

Photograph 1: 2212 Jacoby Creek Road (Google Earth, Imagery Date 4/2019), facing north.

Van Kirk observed the property was well-maintained and described it as follows:

> The Old Jacoby Creek School is a large wood structure with approximately 4,900 square feet of floor space included on the main floor and in the basement. It sits…on an acre of land screened by pines and alders.
>
> The front facade is "L" shaped with a pedimented gable at right angles to a hipped-roof section. Nestled in the "L" is a square belltower with a pyramidal roof. It is open at the top by twelve decorated arches. The pediment has wide eaves, a plain frieze, and a small window with ventilation slats above. Beneath the eaves of the pediment is a line of false rafter ends which is repeated around the entire building. The main room below the pediment is lighted on the front by two pairs of long, narrow windows of six panes each. The basement has a central door flanked by single, four-pane windows. A door, leading to interior steps to the main floor, has been added at the base of the belltower on the southeast side.

[7] Fairchild Aerial Surveys, Flight C-19180, Frame 3-55, 1:180,000, June 3-23, 1953, available at http://mil.library.ucsb.edu/ap_indexes/FrameFinder/ (accessed January 2020); also see historicaerials.com (accessed January 2020) for aerial photographs from 1956, 1972, 1989, and 1993, as well as Google Earth, which includes additional aerials from the early 2000s to 2019.

> The double front doors are wood with large glass panes. Recessed behind an arched entrance below the belltower, the doors are bordered by a transom and sidelights. The front steps were removed some time ago, but will be replaced as part of the owners' rehabilitation plans. A door has been added off the porch into the main room at the west corner of the building.
>
> The front of the hipped-roof section originally had two pairs of long, narrow windows of six panes each. During the late 1930's when the primary room was divided, two more windows were added to the pair at the south corner. Window changes in the basement of this section include replacement of four small square windows with a large, multipaned window, the addition of a small horizontal window, and the boarding up of two, four-pane windows.
>
> The building's southeast side has five, six-pane windows like those of the front. The basement has a door and two horizontal windows. The rear wall has six, six-pane windows lighting the main room at the south corner. The basement wall has three square windows interspersed with two horizontal windows under the large windows. Flanking the recessed rear entrance is a single, four-pane window for the cloak room on the southeast side of the entrance and two, four-pane windows lighting the teacher's and supply room on the other side, below which is a single horizontal window. The rear entrance has the original wood door, topped by a transom. Another door leads from the porch into the cloak room. Fan brackets with what looks like three raised baseball bats decorate the corners of the porch. The steps are gone, but will be replaced. At the north comer on the rear wall was another entrance and stairway, but these were removed during the I960's when the building was used by a religious group. That area was closed off and will not be reopened.
>
> The northwest wall has six, six-pane windows lighting the main front room with two, four-pane windows below in the basement wall. There are a door and three horizontal windows in the basement at the north comer.
>
> The building is covered with three different sidings. The belltower, pediment and upper portion of the main building have fishscale shingles. A raised moulding separates the shingles from an overlapping board siding which extends to the water table. The basement siding is cove-rustic shiplap.[8]

Van Kirk noted that the school's transitional architecture is its most significant character-defining feature:

> The old school's architecture does not easily fit into any formal style, rather it is an example--and a very good one—of the kind of transitional architecture being built in Humboldt County during the first decade of the 20th century. Builders during this period began to reject the Victorian styles and to adopt, instead, the

[8] NRP Inventory – Nomination Form: Old Jacoby Creek School, Bayside, Humboldt County, California, NPS-85000353-0000, 7. Description and 7. Description Continuation Sheet 1, Item Number 7, Page 1.

> simplier [sic] architecture leading to the Craftsman style which was popular in Humboldt in the teens and 20's. Like most transitional architecture, the Old Jacoby Creek School exhibits holdovers from the past such as the fancy shingles, pedimented gable, and the arched entrance. The wide eaves, false rafter ends, overlapping-board siding, and solid simplicity were harbingers of things to come.[9]

1.2.2 Bayside Community Hall, 2297 Jacoby Creek Road

The Bayside Community Hall (OHP #131410, Cal. Reg #12-0016) at 2297 Jacoby Creek Road was formerly known as the Bayside Grange (**Photograph 2**). The Office of Historic Preservation (OHP) listed the building on the CRHR in 2002 as the Bayside Grange Hall with a construction date of 1940.[10] While it is known that the Community Hall / Grange Hall is listed in the CRHR, no other documentation for this property was found during research for this report or included in the HPSR.[11]

Photograph 2: 2297 Jacoby Creek Road (Google Earth, Imagery Date 4/2019), facing south.

JRP assessed the character-defining features of this property during the desktop review. The building, designed in the Minimal Traditional style, sits on a raised L-shape foundation with vertical wood siding on an angled grade. The rest of the building has horizontal wood siding. The cross-gable roof has both wide and narrow eaves and is covered in composite shingles. Each gable has a louvered vent. Underneath a front gable, a composite shingle gable porch with square half-posts serves as the north entry. It is framed by double horizontal sliding windows. On the west side, a gable projection with exposed rafters is supported by square posts and

[9] NRP Inventory – Nomination Form, Old Jacoby Creek School, Bayside, Humboldt County, California, NPS-85000353-0000, 7. Description: Continuation Sheet 2, Item Number 8, Page 1.

[10] California Office of Historic Preservation, "Directory of Properties in the Historic Property Data File for Humboldt County" (April 5, 2012), 8.

[11] George Riner, "Metadata Sheet for Bayside Community Hall," Northwest Information Center, June 22, 2018, as included in HPSR.

It is likely that Eric Hedlund recorded both the Bayside Grange Hall and the Bayside Community Hall in 1978. However, while his survey maps note that 8-35 and 8-36 are in the correct map location for these historic resources, there are no descriptive recordations for those numbers in his survey.

shelters a side porch; it is accessed by wooden stairs. Single horizontal sliding windows and two over four fixed windows are located throughout the building. The one-acre property on which this building sits has some open space and there are trees at the southeastern corner, but the building is bounded on the south and east sides by paved parking lot, including the area immediately adjacent to Jacoby Creek Road. While the building's setback from the roadway can be considered character defining, the paved parking areas are not.

1.2.3 Charles Monahan-Dexter House, 1788 Old Arcata Road

The Charles Monahan-Dexter House and former Bayside Post Office (P-12-003658, Hedlund P-04) was built at 1788 Old Arcata Road circa 1887 (**Photograph 3**).

Photograph 3: 1788 Old Arcata Road (Google Earth, Imagery Date 4/2019), facing north.

The Folk Victorian residence is largely unchanged since Hedlund's recordation, in which he described it as a multi-sectioned building:

> The main section is a two-story, 'four-over-four' room floor plan, with a hipped roof and brick chimney. The recessed one-story wing also has a hipped roof and brick chimney, with a hipped roof porch supported by four decorated posts extending forward over the entire front section. In the main section, the entrance is off center and covered by a narrow, slope roof portico supported on two posts on a raised stairway leading to the door. Another one story structure has been added to the other side of the main two-story section to serve as the post office. The exterior siding is shiplap with end boards. The trim at the eaves is ogee boxed cornice with frieze. The frieze on the two story section is decorated with dentils and bracket. All windows have plain molding; most are in pairs and are two-sash, double-hung, with vertical mullion dividing the sashes, which have two panes each.[12]

[12] Knox Mellon, SHPO to Omas L. Homme, November 3, 1978, 47, in Hedlund, Addendum of "An Historic Resources Inventory: The Old Arcata Road-Myrtle Avenue Corridor" (1978).

The Keeper of the NRHP determined the house eligible for the NRHP in 1979, significant under Criteria A and C. At that time the building served as a post office.

The property's frontage along Old Arcata Road includes a driveway entry south of the house, a narrow fenced front yard, and an unpaved parking area adjacent to the road. The front yard has some landscape features that appear to be of recent vintage.

The character-defining features of this property are understood to be the design of the house and its general set back from the roadway, which is approximately 35 feet. It does not appear, however, that the front parking area or landscaped front yard contribute to the historic character of this property.

1.2.4 Nellist-Zucar-Smith House, 1752 Old Arcata Road

The Nellist-Zucar-Smith House was built circa 1889 and located at 1752 Old Arcata Road (**Photograph 4**).

Photograph 4: 1752 Old Arcata Road (Google Earth, Imagery Date 4/2019), facing north.

When Hedlund recorded this property as 9-05, he observed that this multi-part Folk Victorian house was likely built in phases. Sitting on an irregular rectangular plan, the house incorporates a pyramid roof on the front building. Its east wall is bisected by a T-shape gable roof with north-south hipped sections. Overall, the rectangular plan is flanked on the north and south sides by shed roof extensions. A flat-roofed structure is visible at the rear and includes vertical ribbon windows. Hedlund briefly describes the facade's character-defining features as "[bay] windows at front [that] are joined by a roof, all of which together form a recessed front entrance…Both porch roof and main roof have boxed cornice and frieze, with ornamental bracket trim."[13] The house is set back from the roadway approximately 35 feet. Its front yard features a semi-

[13] Hedlund, "An Historic Resources Inventory: The Old Arcata Road-Myrtle Avenue Corridor," 91.

circular paved driveway, lawn, and some trees. It is unclear when the current front yard features were installed. The Hedlund recordation in 1978 notes that a white picket fence was in the front yard, but does not indicate the existence of the circular driveway. So, it appears that the current layout of the front yard has occurred within the past forty years. Thus, in addition to the design of the house, only a landscaped setback from Old Arcata Road is considered character defining for purposes of this report.

1.2.5 David Oscar Nellist House, 1686 Old Arcata Road

The David Oscar Nellist House (P-12-003661, Hedlund 9-11) is a Folk Victorian house built in 1904 and located at 1686 Old Arcata Road. The property includes an undated outbuilding east of the house. Overall, the Nellist House appears to be largely unchanged since Hedlund's 1978 recordation. Hedlund described it as:

> complex in plan; the main building has a hip roof with two planes extended upwards to a gable and with one plane extended forward to form an end gable over bay windows at front of [the] house. There are additional rooflines over the partial veranda at front of building and added rooms at rear of main building. [The] plan is essentially a square with long sides of rectangular additions joining at rear…House is basically one story but roofline is irregular… [14]

Hedlund's description also including the Nellist House's ornamentation. These features include:

> Exterior wall material is wood shiplap siding, with fishscale decorative wood shingles in gable ends…[and] endboards at building corners…Roof trim at caves is ogee boxed cornice with frieze. Roof trim at gable ends is dentil decorated boxed cornice with frieze on pedimented gable over front bay; without dentil decoration on other gable ends…Windows have flat structural opening with sheld above and lugsill below… [they are] two sash single pane and double hung. The main bay window has a geometric stained glass transom with small squares of colored glass as a border.
>
> Open partial veranda at front of house with central entrance. Plain molding around door. Rectangular glass in wood door with panels below. Turned posts support porch roof with is trimmed with decorative cutout bargeboards and brackets. There is a stickwork railing and bannister. House is surrounded by a picket fence.[15]

This property's character-defining features include the house's design and ornamentation, along with the general character and space of the landscaped front yard. This includes the location of the driveway and the property's picket fence.

[14] Hedlund, "An Historic Resources Inventory: The Old Arcata Road-Myrtle Avenue Corridor," 95.
[15] Hedlund, "An Historic Resources Inventory: The Old Arcata Road-Myrtle Avenue Corridor," 95.

1.2.6 Rhodes-Marsh House & Trinidad Water Tower Complex, 1401 Old Arcata Road

The Rhodes-Marsh House & Trinidad Water Tower Complex (P-12-003681, Hedlund 9-14) is located at 1401 Old Arcata Road (**Photograph 5**). Built in 1930 and set back from the road, the house is a folk structure with Neoclassical details. Hedlund describes the house as covered with "shiplap siding" and "two sash plan molding windows with lugsills, one sash and transom."[16] The house's hipped pyramid composite shingle roof has small eaves and features a cross gable pedimented porch supported by square posts. That porch shelters double-hung multi-light windows and an off-center front door. The house is entirely sided with horizontal wood and includes an attached double-door garage.

The three-story water tower is sided with shiplap and six-light fixed windows. Like the house, it has a pyramid shingle roof. The property also has two wood-sided front gable sheds located north and northwest of the house. Both the house and water tower were recorded in Hedlund's 1978 survey, and the OHP data file notes the house was determined ineligible in 1979.[17]

Photograph 5: 1401 Old Arcata Road (Google Earth, Imagery Date 4/2019), facing southwest.

For purposes of this report, the property's character-defining features include the house and water tower's design, along with the front yard that includes orchard trees, a picket fence, and unpaved driveway. There is also a sidewalk and mow strip in front of this house, separated from the front yard by a hedge and a fence. Thus, the sidewalk and mow strip are not considered part of the character of this property. It is unclear whether the sidewalk and mow strip are located within the road right of way.

[16] Eric Hedlund, Natural Resources Division, Humboldt County Department of Public Works, Eureka, California, Report No. S-014557 "An Historic Resources Inventory: The Old Arcata Road-Myrtle Avenue Corridor" (March 1978), 97.

[17] California Office of Historic Preservation, "Directory of Properties in the Historic Property Data File for Humboldt County" (April 5, 2012), 5.

1.2.7 Mistwood Educational Center, 1928 Old Arcata Road

The property at 1928 Old Arcata Road (P-12-003770) is today known as the Mistwood Educational Center (**Photograph 6, Photograph 7,** and **Photograph 8**). When Van Kirk recorded the property in 1979, she described the building as "this little classic-style building, lined with eight-pane windows." The building was constructed in 1882 for the Bayside division of the Sons of Temperance.[18]

While Van Kirk did not describe the building's character-defining features, they were noted by JRP during the desktop review. Designed in a vernacular style, the rectangular-plan building rests on a raised foundation on an angled grade. The former community hall is topped with a steeply pitched composite shingle front gable roof and its narrow, closed eaves highlight a modest entablature of undecorated frieze and a typical architrave line.[19] Built into a gentle slope, the hall is generally unadorned and covered with horizontal wood siding. The original northwest-facing entry is shaded by a small exposed rafter gable porch roof supported by brackets. The east side of the hall includes two entrances: a wood door accessed by downward steps on the northern end, and another wood door reached from the parking lot by elevated concrete and shaded by a gable roof porch. Research did not determine whether these west side entrances are original.

JRP's desktop review observed that modifications have been made to the building's vernacular exterior that impact its integrity. Windows include four-over-four vinyl replacement sashes, a shed roof projection has been added to the west wall, and an elevated walkway with wood railings projects from the west wall to connect the hall to a gable-roofed building that appears to have been constructed in the latter twentieth century. There is a small playground behind (east of) this newer building.

The nearly half-acre parcel on which these buildings sits includes some open areas, trees at the southern end, and an unpaved parking area on the east side along Jacoby Creek Road. The property also uses the area situated northwest of the building at the intersection of Old Arcata Road and Jacoby Creek Road. This unpaved area is in the road right of way, but it currently has a low fence and is used for parking. As noted herein, this parking area is where Old Arcata Road (or Myrtle Avenue) used to intersect at a near T-junction with Jacoby Creek Road. While part of the building's setting since the mid-twentieth century, this area is not character defining.

[18] S. Van Kirk, "Bayside Community Hall," P-12-003770, Report No. S-049179 "Historical Setting and Significant Structures, Jacoby Creek Sewer Project" (1979), no page number. A single page from the 1979 report was included in the HSPR.

[19] Virginia Savage McAlester, *A Field Guide to American Houses: the Definitive Guide to Identifying and Understanding America's Domestic Architecture* (New York: Alfred A. Knopf, 2015), 248-249.

Photograph 6: 1928 Old Arcata Road (Google Earth, Imagery Date 4/2019), facing southeast.

Photograph 7: 1928 Old Arcata Road (Google Earth, Imagery Date 4/2019), facing west.

Photograph 8: 1928 Old Arcata Road (Google Earth, Imagery Date 4/2019), facing east.

2 Impacts and Secretary of the Interior's Standards Analysis

2.1 Project Description

The project stretches along Old Arcata Road from a location north of Anderson Lane to the intersection of Old Arcata Road and Jacoby Creek Road in the Bayside area of Arcata. The HPSR provided the following project description:

> The City of Arcata (City) proposes to improve a 1.5-mile section of Old Arcata Road and an adjoining 400- foot segment of Hyland Street that require rehabilitation and reconstruction efforts to improve safety and traffic flow. The existing roadway pavement (travel lanes and bike lanes) is extremely deteriorated and considered to be in "poor" condition. Rehabilitation and reconstruction will improve safety and traffic flow. There are limited or no sidewalks and, along most of the reach, bike and pedestrian access is available only on the road shoulder in some locations.
>
> The goals of the project are to improve safety for driving, bicycling and pedestrian uses. This will be accomplished by installing a new roundabout at the intersection of Jacoby Creek Road, installing new sidewalks, and improving the existing sidewalks. This may also include improvements to the existing underground stormwater, water system, and sewer system.

The Archaeological Survey Report (ASR), which is attached to the HPSR, provided the following additional information, stating that the project would include "improving and widening the existing road . . . (and) paving driveway approaches" and that the projects area of potential impact "consists of predominantly previously disturbed road, walking paths, bikes lanes, and other lands along Old Arcata Road within the right-of-way maintained by the City." The ASR also stated that the APE includes the "Jacoby Creek Road approach to the new roundabout (that) will require slight realignment of the roadway to the north. New pavement will extend beyond the northern edge of existing pavement by up to 16 feet." This is understood to be within the approximately 40 foot space in road right of way adjacent to the east side of the landscaped island in front of the post office.

WRA prepared cultural resources documentation for project compliance under Section 106 of the National Historic Preservation Act, which was required because of the project's federal funding through the Caltrans Local Assistance program. The HPSR was part of that documentation, and it addressed archeological and built environment resources in the APE. Caltrans has not requested the City have a separate Architectural APE, nor has Caltrans required preparation of a Historical Resources Evaluation Report (HRER). Caltrans is the lead agency for Section 106 compliance, and the City is the lead agency for project compliance under the CEQA.

2.2 CEQA Impacts Analysis

Part 1 of this report identified seven built environment known and potential historical resources, as defined in CEQA Guidelines Section 15064.5(a), and their character-defining features. As previously stated, JRP did not evaluate the seven buildings' significance or integrity for the NRHP or CRHR because the seven properties are considered as historical resources for the purposes of this report.

This section of the report provides analysis regarding impacts to the known and potential historical resources. The analysis in this section is intended to assist the City of Arcata in determining whether the project will have a significant impact to historical resources under CEQA.

2.2.1 CEQA Historical Resources Impacts and the Secretary of the Interior's Standards

In CEQA Guidelines Section 15064.5(b) impacts to a historical resource are defined as those that cause a substantial adverse change in the significance of the historical resource. Substantial adverse change is defined as the physical demolition, destruction, relocation, or alteration of the resource or its surroundings that materially impair the resource. A resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that convey its historical significance. Under CEQA, projects following the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (SOI Standards) are generally considered mitigated to less than significant impact. CEQA requires the lead public agency to mitigate any impacts through enforceable measures included in project permits, agreements, or other measures. Impacts can be direct, indirect, and cumulative.

Impacts have the potential to diminish a historical resource's historic integrity, i.e. the physical characteristics that convey its significance. Historic integrity is assessed with regard to the retention of the historical resources' characteristics of Location, Setting, Design, Materials, Workmanship, Feeling, and Association.

The SOI Standards provide guidance on the preservation and protection of cultural resources listed in or eligible for listing in the NRHP. This is also used for properties listed in or eligible for listing in the CRHR, and lead agencies use the SOI Standards for other CEQA historical resources. Four types of treatments, Preservation, Rehabilitation, Restoration, and Reconstruction, comprise the SOI Standards. Rehabilitation is the most relevant treatment to assess this project. Rehabilitation is defined as "the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those

portions or features which convey its historical, cultural, or architectural values."[20] The SOI Standards for Rehabilitation are:

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.[21]

9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

[20] Kay D. Weeks and Anne E. Grimmer, *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (National Park Service, Heritage Preservation Services: Washington D.C., 1995), 61.
[21] This report does not address archeological resources; therefore, this standard is not addressed.

2.2.2 Project Specific Impacts Analysis

The Old Arcata Road Improvements Project will not result in the physical demolition, destruction, relocation, or alteration of any of the seven known and historical resources addressed in this report or any other building along the project route. The proposed project does not have any potential to materially impair any historical resource through demolition.

The following subsections regarding the general road improvements and construction of the roundabout examine whether the project would cause a substantial adverse change by alterations that would cause the surroundings of historical resources to be materially impaired. This could occur through impacts to landscaping features associated with the known and potential historical resources, or through visual impacts to those resources.[22] To materially impair such features, the project would need to alter in an adverse manner those physical characteristics that convey historical significance.

The focus of the analysis is on the impact to the individual seven properties described in this report. As noted, no historic district has been identified along the project route, and there does not appear to be sufficient concentration, linkage, or continuity of historic buildings that are united historically or aesthetically along Old Arcata Road. While the area includes multiple old buildings that date to a possible late nineteenth / early twentieth century period of significance, and the area's rural character generally remains, there are many mid to late twentieth century / early twenty-first century properties, as well as renovated / altered buildings, along the project route that diminish the potential for establishing a historic district.

Roadway Improvements

The proposed road improvements beyond the area where the roundabout would be built include widening Old Arcata Road within the road right of way, construction of new sidewalks, improvements for bicycles, and paving driveway approaches. The known and potential historical resources possibly affected by these actions would be:

- Charles Monahan-Dexter House, 1788 Old Arcata Road (also analyzed below)
- Nellist-Zucar-Smith House, 1752 Old Arcata Road
- David Oscar Nellist House, 1686 Old Arcata Road
- Rhodes-Marsh House & Trinidad Water Tower Complex, 1401 Old Arcata Road

The proposed changes would alter the road in a manner that is consistent with its current uses and operations. The project does not include encroachments into the area between the roadway and these buildings. There would be limited alteration in the appearance of the road and thus there would be no visual impact to the historic character of these properties, and the

[22] Visual impacts can be considered separately in the environmental process, besides in relation to historic resources.

project would not entail removal of any landscape feature (including fencing) that is considered historically significant to these properties.[23] The roadway improvement features of the project would not diminish the historic integrity of these known and potential historical resources. Furthermore, these improvements would comply with the SOI Standards for Rehabilitation, specifically Standard 9 and Standard 10, whereby the proposed new adjacent construction would not destroy historic materials, features, or spatial relationships that characterize each property, and the new construction would be as compatible with the historical resources as the current roadway is. The new construction could also be removed without impacting the historic integrity of these resources.

Roundabout Construction

The proposed roundabout would reconfigure the intersection of Old Arcata Road and Jacoby Creek Road (**Figure 1** and **Figure 2**). It would also include the same road improvements noted above, including widening Old Arcata Road within the road right of way, construction of new sidewalks, improvements for bicycles, and paving driveway approaches.

The known and potential historical resources possibly affected by the roundabout would be:

- Old Jacoby Creek School / Bayside School, 2212 Jacoby Creek Road
- Bayside Community Hall, 2297 Jacoby Creek Road
- Mistwood Educational Center, 1928 Old Arcata Road
- Charles Monahan-Dexter House, 1788 Old Arcata Road (also analyzed above)

These properties have the potential to experience some visual impact, and only the Mistwood Educational Center would experience change in the space between the building and the altered roadway. The other known and potential historical resources described in this report are more than 300 feet away from the area in which the roundabout would be built, with the David Oscar Nellist House, at 1686 Old Arcata Road, approximately 860 feet northwest of the area, and the Rhodes-Marsh House & Trinidad Water Tower Complex, at 1401 Old Arcata Road, located over 3,100 feet northwest of the roundabout site.

The character-defining features of the four properties listed above are focused on the design of the buildings, along with their general setting that includes the spatial relationship between the buildings and Old Arcata Road / Jacoby Creek Road. The project will not affect the buildings, and none of these properties have features in their immediate surrounding / setting, such as landscape features, that are character defining and would be affected by construction of the roundabout. Thus, the project will not diminish the integrity of location, design, materials, workmanship, or association of the known and potential historical resources listed above.

[23] As noted, visual impacts can be considered separately in the environmental process, besides in relation to historic resources.

Figure 1: Rendering of Existing Intersection of Old Arcata Road and Jacoby Creek Road. Mistwood Education Center is on the right side of this image. No other known or potential historical resources are depicted.

Figure 2: Rendering of the Proposed Roundabout at the Intersection of Old Arcata Road and Jacoby Creek Road

The Old Jacoby Creek School / Bayside School building is set well back from the road and has a wide parking area along Jacoby Creek Road that is within the road right of way. The Bayside Community Hall has paved parking along Jacoby Creek Road. The Charles Monahan-Dexter House has a front parking area and narrow front yard with recent landscaping, and the Mistwood Educational Center has the unpaved parking area north of the building that is actually within the right of way of Old Arcata Road. In addition, only a portion of this parking area would be affected and the former Bayside Community Hall (now Mistwood Educational Center) would still be set back from the intersection with space for parking on that side of the building.

Visual impacts could occur if the project diminished historical resources' integrity of setting and feeling, which relate to how historical resources fit into their surroundings and how a property expresses a sense of a particular time. Such impacts could also occur if the project were not preserving features, spaces, and spatial relationships that characterize the known and potential historical resources (Standard 2). Compliance with the SOI Standards for Rehabilitation also means that the project should be compatible with the historical resources, but not create a false sense of history, and construction adjacent to the historical resources should also be reversible such that the historic integrity of these properties would be unimpaired (Standards 3, 9, and 10).

While the Bayside area where these buildings are located retains its rural character, it has experienced various changes over time with alterations to the roadways, demolition of many late nineteenth century and early twentieth century buildings / structures, and addition of multiple new buildings. These changes have affected the general character of the area that surrounds the historical resources adjacent to the roundabout site. Most importantly, the current configuration of the intersection of Old Arcata Road and Jacoby Creek Road dates to the mid-twentieth century and does not reflect the historic layout of the roadways that was present when all four of the buildings noted above were constructed. There is no evidence that the configuration of this intersection contributed in any way to the history or significance of the four properties. These roads have evolved through time, and the proposed roundabout is further evolution of the intersection. The roundabout would not be an oversized alteration that other structures, like a grade separation or expressway on / off ramps, would represent. This new configuration does not represent a change to Bayside such that residents and visitors could not continue to comprehend the historic character of the nearby known and potential historical resources. Therefore, the adjacent historical resources will retain historic integrity, and the historical resources' features, spaces, and spatial relationships will also be retained. Furthermore, the rendering of the proposed roundabout (**Figure 2**) shows that landscaping would be included to help integrate the new structure into the character of Bayside, which in turn helps the project be generally compatible with the historical resources. In addition, the

roundabout is designed in a manner that if removed in the future the integrity of the nearby historical resources would be unimpaired.

2.2.3 Cumulative Impacts Analysis

Cumulative impacts analysis examines the current project effects taken together with impacts of past projects and known projects in the foreseeable future. Besides the mid-twentieth century reconfiguration of Old Arcata Road and Jacoby Creek Road and demolition and construction of various buildings in the area discussed in this report, as well as the obvious common contemporary upgrades to the roadways (such as signage and stripping), there are no known past projects that have negatively impacted historical resources along the project route. There are also no known projects in the foreseeable future that could have an impact on historical resources.

Therefore, the Old Arcata Road Improvement Project will not cause a cumulative impact to historical resources because the current project taken together with past and foreseeable future actions do not cause a substantial adverse change to historical resources.

2.3 Conclusion

The Old Arcata Road Improvements Project will not cause a substantial adverse change in the significance of any known or potential built environment historical resource. As discussed herein, there are built environment properties along the project route that are historical resources, as per CEQA Guidelines Section 15064.5(a), or are assumed to be historical resources for the purposes of this report. These known and potential historical resources are individual properties, and there does not appear to be a historic district along the project route.

The project will not cause a substantial adverse change, as per CEQA Guidelines Section 15064.5(b), because it will not result in the physical demolition, destruction, relocation, or alteration of the known or potential historical resources discussed in this report. This includes impacts to the surroundings and landscape features that contribute to their significance. The project will not diminish the historic integrity of the historical resources, and although not specifically designed using the SOI Standards, the project generally adheres to those standards.