Arcata Annie & Mary Trail Connectivity Project

Public Circulation Draft IS/MND

City of Arcata

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Prepared for:

City of Arcata
736 F Street
Arcata, CA 95521

T 707.825.2163 | **website** https://www.cityofarcata.org/831/Annie-Mary-Trail-Connectivity-Project

Prepared by:

718 3rd Street
Eureka, CA 95501, United States

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1. Project Information

Project Title	Arcata Annie and Mary Trail Connectivity Project
Lead Agency Name & Address	City of Arcata Department of Environmental Services 736 F Street Arcata, CA 95521
Contact Person & Phone Number	Emily Sinkhorn (707) 825-2163 esinkhorn@cityofarcata.org
Project Location	Humboldt County, Arcata, CA (City of Arcata and Humboldt County jurisdiction)
General Plan Land Use Designation	City: Railroad corridor is not zoned. Industrial General, Industrial Limited, Residential Very Low Density, Residential Low Density, Residential Medium, and Public Facility. Caltrans right of way. County: Industrial General, Public Facility, and Residential Estates.
Zoning	City: Railroad corridor is not zoned. Industrial General, Industrial Limited, Residential Very Low Density, Residential Low Density, Residential Medium, and Public Facility. Caltrans right of way. County: Limited Industrial and Agricultural Grazing.

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

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

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

1.2 Purpose and Need

The purpose of the Arcata Annie & Mary Trail Connectivity Project is to close gaps in walking and biking connectivity for neighborhoods within north Arcata, which would enhance the ability of the residents and visitors of Arcata to enjoy, recreate, and do business in a safe and family-friendly manner. Currently, traffic safety is a concern for pedestrians and cyclists in the Project Area (Trail People & SHN 2020). Cyclists traveling from the southern Project Area at Sunset Avenue to the northern Project Area at Giuntoli Lane are required to maneuver through streets with no shoulders or delineated bicycle lanes. Roadway intersections, United States Highway 101 (US 101), and State Route 299 (SR 299)

provide barriers to non-motorized transportation access to and from the Valley West Neighborhood in northern Arcata. The Valley West community is home to multi-family housing, mobile home parks, hotels, and retail stores; however, the area has limited safe and legal pedestrian and cyclist access options to schools, parks, businesses, and downtown Arcata.

The Project would enhance safe pedestrian and non-motorized vehicle travel between Valley West, West End Road, Aldergrove Industrial Park, downtown Arcata, Cal Poly Humboldt, and Humboldt Bay Municipal Water District's (HBMWD) Park 1 property on West End Road, along the Mad River. Constructing the separated trail along a railroad corridor would provide a safe location for pedestrians and cyclists to travel and recreate and enhance connectivity to neighborhoods, parks, schools, and businesses. The HBMWD Park 1 property is a recreational facility along the Mad River and represents the eastern terminus of the Project. The Project would also link users to the Arcata Community Forest via the Arcata Ridge Trail trailhead.

Through promotion of multi-modal transportation, the Project could support multiple environmental and community benefits. Vehicle miles traveled (VMT) and emissions of greenhouse gases would be reduced through increased commuting by walking and bicycling within the City. The Project Area currently experiences drainage problems in discrete locations; the Project would be designed to avoid contributing to existing drainage constraints. The trail and trail amenities would improve the visual character of the Project Area, which can enhance community identity. As a community benefit of the trail, the number of walking and bicycle trips, public health, safety, and mobility would increase. The trail would provide safe connectivity opportunities for residents, visitors, and public schools, which could help decrease the number of traffic collisions involving pedestrians and cyclists in the Project Area.

1.2.1 Project Goals

Goals of the Project specifically include:

- Provide safe pedestrian and non-motorized vehicle travel between Valley West, West End Road, Aldergrove Industrial Park, downtown Arcata, Cal Poly Humboldt, and existing parks.
- Ensure the Project has a neutral impact or benefit to existing localized drainage constraints.
- Promote non-motorized transit to reduce climate-related impacts, including a reduction in VMT, and improve public health.
- Improve the visual character of the Project Area.

1.3 Project Location

The Project is located along an inactive 3.5-mile segment of railroad corridor within the Great Redwood Trail Agency [(GRTA), formerly North Coast Railroad Authority (NCRA)] right of way and properties held in fee, between Sunset Avenue/Larson Park and Humboldt Bay Municipal Water District's (HBMWD) Park 1 (Appendix A, Figure 1 – Vicinity Map) off of West End Road. The railroad corridor is bordered by public facilities, and residential, commercial, and industrial uses (Appendix A, Figure 2 – Project Overview). A small section of the trail is adjacent to Janes Creek and riparian habitat. A small portion of the Project Area near Janes Creek and West End Road is included in the mapped Federal Emergency Management Agency (FEMA) 100-year flood zone (Appendix A, Figure 3 – FEMA 100-year Flood Zone). However, the majority of the Project Area as well as the trail alignment is excluded from the FEMA 100-year flood zone (Figure 3A and Figure 3B). No portion of the Project Area is in the California Coastal Zone. The southern portion of the Project would occur mostly within the former Northwestern Pacific Railroad (NWPRR) right of way and transitions to the former Arcata and Mad River Railroad (AMRRR) corridor in the northern Project Area near the intersection of Ericson Way and West End Road. These segments are now under the jurisdiction of the Great Redwood Trail Authority (GRTA). Street and crossing improvements would occur on City roads, within Caltrans right of way, and at private driveways. Trail access points would be constructed within City or HBMWD property.

Street and crossing improvements would occur at Sunset Avenue, Todd Court, Aldergrove Road, Giuntoli Lane, West End Road, and private driveways. Trail access points would occur at Sunset Avenue Trail Access, Arcata Skate Park,

Larson Park, Todd Court, St. Louis Road, West End Road, Arcata Ridge Trail Trailhead, Giuntoli Lane, Ericson Court, Frank Martin Court, and HBMWD Park 1.

The primary trail alignment is proposed along the NWPRR and AMRRR right of ways (Figure 2A – Figure 2F). In one area parallel to West End Road, the alignment may need to adjust to accommodate two residential properties (APN 504-201-001 and 504-201-018) in close proximity to the AMRRR right of way (Appendix A, Figure 4 – Alignments Map). Under this scenario, the trail alignment would shift east to reduce impact the trail will have on the two residential properties adjacent to the Project (APN 504-181-021 and 504-181-025).

1.4 Project Description

The Project would construct approximately 3.5-miles of Class I bike path with highway overpass and trailhead improvements. The Project would provide a safe walking and biking route from the existing northern terminus of the Humboldt Bay Trail at the Arcata Skate Park/Larson Park to the Valley West neighborhood, the Aldergrove business park, and the HBMWD Park 1 along the Mad River. In addition to safety and connectivity improvements, the trail would provide opportunities for nature study and recreation.

The trail would be an asphalt-concrete paved pathway Class I facility, with a ten foot wide trail (five feet per travel lane) with two 2-foot gravel shoulders. In locations with adequate space, such as near the Arcata Ridge Trail connection on West End Road, the trail would have one 2-foot gravel shoulder and one wider 4-foot gravel shoulder for potential equestrian use. The trail may be narrowed in limited locations where unavoidable site constraints exist. The trail would include new bridge crossings over gullies and drainages. The trail would cross multiple city streets and provide trail access at multiple locations. Connectivity improvements ranging from new striping to structure widening would occur at the existing US 101 and SR 299 overpass bridges to enhance safe trail access from Valley West to Cal Poly Humboldt. At those locations, pedestrian and bicyclist safety features would be constructed in accordance with industry standards noted below. Due to width limitations for the existing Park 1 access road, painted sharrow markings may be used for the portion of the trail that would be shared with vehicles entering and exiting the Park 1 parking area.

The Project would be designed in general accordance with the Caltrans *Highway Design Manual, 7th Edition* (Caltrans 2020a). In addition, the Project would be designed in general accordance with other specific applicable standards, including the *2019 California Building Code* (CBSC 2019), *Regulations Governing Standards for Warning Devices for At-Grade Highway-Rail Crossings* (PUC 2016), *California Manual on Uniform Traffic Control Devices* (Caltrans 2021a), *Guide for the Development of Bicycle Facilities* (AASHTO 2012), *Urban Bikeway Design Guide* (NACTO 2014), and the 2010 Americans with Disabilities Act Standards for Accessible Design (DOJ 2010).

1.4.1 Project Elements

Key Project elements are summarized below.

Geotechnical Investigation

A geotechnical investigation would occur to complete the trail design in discrete and limited locations that may require bridges and/or retaining walls. Geotechnical investigation would utilize a drill rig and would require vegetation and/or tree removal in the area of study. The activity would be short-term in duration (e.g., approximately one day).

Trail and Shoulders

The trail would be an asphalt-concrete paved pathway Class I facility, with a ten-foot-wide trail (five feet per travel lane) with two 2-foot gravel shoulders. In locations with adequate space, such as near the Arcata Ridge Trail or Park 1, the trail would have one 2-foot gravel shoulder and one wider 4-foot gravel shoulder to provide additional user space. The trail may be narrowed in limited locations where unavoidable site constraints exist. Railroad rails would be removed. However, railroad ties would be left in place where they remain along the remnant railroad corridor. The trail would be constructed atop the railroad ties.

Tree and Vegetation Removal

Vegetation removal would be required for general clearing and grubbing within the Project Area. Tree removal would also occur.

Grading and Fill

Grading would need to occur along the entire trail alignment to achieve accessible slopes and suitable trail width. Similarly, fill would be placed and compacted along the alignment to establish the trail prism. Grading permits would be obtained through the City and County as needed.

US 101 and SR 299 Overpass Improvements

Improvements would enhance pedestrian bicycle safety and access on the US 101 Sunset Avenue Overpass and SR 299 Giuntoli Lane Overpass. SR 299 Overpass enhancements would potentially include demolition, grinding, structure widening and associated support columns and footings, sidewalk enhancements, striping, railing enhancements, and/or barrier enhancements. US 101 Overpass enhancements could include grinding and restriping. Both structures are Caltrans facilities; any alterations to either overpass requires consistency with Caltrans design standards and processes.

US 101 and SR 299 overpass bridge deck widening, if required, would include removal of the existing concrete barrier and installing additional concrete/reinforcement and new barrier/railings to widen the bridge by approximately two feet. To widen the bridge, a temporary shoulder closure would be established with a k-rail for the duration of work. A temporary work platform/debris containment system would be installed below the existing bridge deck using a snooper truck on the bridge deck, which would require lane closure.

Overhang brackets to support the platform and debris containment system would be installed on the face of existing edge girder using drilled-in anchors. The existing concrete barrier, fence, and edge of deck would be removed by chipping. Existing reinforcement bars would be extended with mechanical couplers. Formwork would be installed below the edge of the bridge deck. Bridge reinforcement would be completed, followed by pouring the widened deck. Forms would be stripped, and the railing would be installed. The temporary work platform would be removed, and drill holes would be patched using a snooper truck from the bridge deck.

Crossing Improvements

The trail would cross multiple roadways and driveways, including a private driveway near St. Louis Road, three industrial/private driveways on West End Road, and HBMWD's Essex Control Center driveway near the Park 1 trailhead. Two existing driveways that cross the railroad between industrial properties would be demolished. To improve access to the trail, additional crossing and access improvements would occur outside of the railroad right of way at Sunset Avenue, Todd Court, St. Louis Road, and Giuntoli Lane (near Ericson Court). Trail and trail access crossings would meet minimum traffic safety standards and may include improvements such as rapid flashing beacon warning signs, new safety signage, crosswalks, raised crossing/speed tables, curb ramps, truncated domes, sidewalk improvements, fencing to channelize vehicle traffic, stairs and ramps. Improvements will vary slightly by location to meet the site-specific design requirements for each crossing or access point and will at minimum adhere to industry standards for safety and visibility in all locations. Crossing locations and additional trail access points are summarized in Table 1.4-1.

Table 1.4-1 Crossing locations and trail access points. Numbers are cross-referenced on Figure 2A-F.

Segments	Street or Crossing Improvements	Access Points without Crossings
Sunset Avenue to Arcata Ridge Trail	(1) Sunset Avenue (4) Todd Court (6) Private Driveway	(2) Skate Park (3) Larson Park (5) St. Louis Road

Segments	Street or Crossing Improvements	Access Points without Crossings
Arcata Ridge Trail to West End Road Crossing	(8, 9, 10, 11) Driveway accesses (12) Aldergrove Road (13) West End Road/Giuntoli Lane (15) West End Road/Frank Martin Court	(7) Arcata Ridge Trail (14) Ericson Court (16) Frank Martin Court Memorial Trail
West End Road Crossing to Park 1	(17) West End Road (18) HBMWD's Essex Control Center near Park 1	(18) HBMWD Park 1

Fencing

A fence would be constructed between the trail and some industrial properties to direct vehicular traffic, enhance privacy, and ensure safe business operations. Fences and gates may also be constructed along residential properties to provide privacy, security, and access. If possible, fences would be placed at least two feet from the usable trail edge and would be constructed as far away from the trail as possible.

Ancillary Trail Features

Ancillary trail features may include benches, bike racks, drinking fountains, waste receptacles, dog waste facilities, picnic facilities, hitching posts, murals, art installations, interpretive signage, reuse of railroad elements for interpretation or signage, and other features related to public access and education. Features would generally be installed near trail access points (see Table 1.4-1). A parklet (a small park) under St. Louis bridge would also be constructed. Ancillary trail features, such as nature viewing areas, would be constructed adjacent to the primary alignment.

Bridges

Three new bridges would be constructed to span the gullies/drainage within the Project Area. The bridges would span up to 40-feet in length. No in-water work will be required to construct bridges. The bridges are expected to be supported by shallow concrete abutments, but future geotechnical information may demonstrate that the 40-foot-long bridge may require a deeper foundation system. Environmental impact analysis in the ISMND considers the maximum potential depth required for a deeper foundation system, approximately four feet in depth.

Retaining Walls

Two retaining walls would be necessary to maintain accessible slopes, minimize the construction footprint, and to provide enhanced privacy and security where the railroad right-of-way is immediately adjacent to two existing homes (APN 504-201-001 and 504-201-018). The final retaining wall designs and locations would follow additional survey and geotechnical investigations and resulting recommendations for the areas in question.

The location and stationing of retaining walls may adjust in the future as the design progresses. Based on the 30% design, the first retaining wall area spans approximately 450-feet and is adjacent to the Wes Green Landscaping property (APN 507-382-012). This retaining wall would likely be a modified four-foot-tall concrete Caltrans Standard type wall (or similar structure) with a shallow footing constructed approximately two to three-feet below existing grade.

The second retaining wall would be approximately 150-feet long and installed adjacent to two residential properties located close to the proposed trail (APNs 504-201-001 and 504-201-018). Due to the steep slopes in this area a retaining wall with deep foundations is anticipated in this location, up to approximately twenty feet below ground surface. Potential retaining walls options for this location include a soldier pile wall with ground anchors, cantilever

soldier pile walls, mechanically stabilized earth (MSE) wall, or a concrete boardwalk structure. Retaining walls would be designed to adhere to relevant building, engineering, and applicable safety codes.

Drainage and Stormwater Improvements

The majority of this Project lies within boundary of the City of Arcata's and the project design follows the Humboldt Low Impact Development (LID) Standards Manual. Per Section 7.1 (Exempt Projects over 5,000-square feet), the trail portion of the Project is not expected to be required to meet the quantified runoff standards for Regulated Projects (North Coast Stormwater Coalition 2021). The Park 1 access road and parking area is located in the County jurisdiction and is expended to require post-construction stormwater treatment in accordance with the California Construction General Permit. Post-construction stormwater treatment could include vegetated swales, vegetated buffers, permeable pavements, and/or other infiltration systems.

Some of the existing culverts would be extended or upgraded as required, with or without headwalls, to promote drainage of the trail facility. Additional drainage infrastructure (such as drainage inlets and new storm drain piping) would provide positive drainage across the new trail facilities. The existing HBMWD drain line from their Turbidity Reduction Facility near Pipeline Road would not be modified.

Under existing conditions, Janes Creek crosses under the trail alignment via 4-foot diameter corrugated metal pipe arch culvert. This existing crossing would not be altered.

Under existing conditions, the railroad right of way (trail alignment) crosses a waterway just north of the St. Louis bridge via a 2-foot diameter corrugated metal pipe culvert. This existing stream crossing also would not be altered.

Utility Relocation and Improvements

Electrical utility extensions would be required to support new streetlights in limited locations along the trail alignment within Arcata City limits. Solar power would be used to support any new rapid flashing beacon warning sign at crossings included within the Project and would thus not require electrical utility extensions. Existing utilities in the railroad corridor such as HBMWD's fiber optic communications lines would be relocated, if required. No additional utility relocation or improvements are anticipated to be required (e.g., water and sewer).

Striping and Signage

The trail would include required striping and signage in order to comply with CA MUTCD requirements. Striping and directional signage would indicate two travel directions, road crossings ahead, stop signs at intersections, and other signs as needed to ensure the safety of trail users. Trail markers would be installed at every trail juncture. Wayfinding signage to direct users to points of interest along the trail or to access the trail from other locations within the City (outside the Project Area) may also be incorporated. Interpretive signage along the trail would highlight the surrounding environment or historical resources.

Trail Lighting

The Project would include lighting installation to improve safety in key locations. Any exterior lighting would be designed to protect wildlife and nighttime views, including views of the night sky. The Project would be designed to be consistent the recommendations of the International Dark-Sky Association, which includes standards for fixtures, shielding, placement, height, and illumination levels. To comply with these requirements, lighting for the Project would be the minimum lumens necessary, directed downward, shielded, and pedestrian level when feasible. This would ensure lighting is contained within the site and does not cause significant lighting and glare impacts for surrounding land uses and sensitive habitat areas.

Trailhead Development

The Project would include multiple new or enhanced trailhead areas throughout the trail alignment located at Sunset Avenue, Arcata Ridge Trail, off of West End Road near Frank Martin Court, and HBMWD Park 1. Trailhead improvements would generally include trailhead information kiosks, trailhead signs, trail signposts, other signage,

benches, bike parking, and potentially additional trail amenities such as picnic tables and landscaped plants and other features. The access road and parking area at the Park 1 parking area would be paved.

Vehicular Parking

Three parking areas would be constructed or improved along the trail alignment. One gravel parking lot would be improved along West End Road near the Arcata Ridge Trail trailhead; capacity of the parking area would not change. One new paved parking lot would be constructed along a driveway in a City right of way off West End Road near Frank Martin Court and would include five to ten parking stalls, accessible parking, and associated sidewalk improvements. The existing driveway and parking area that serve Park 1 would be enhanced with new paving; parking capacity would remain generally the same as pre-project conditions. ADA parking would be incorporated into the planned parking enhancements at the Arcata Ridge Trail trailhead, Frank Martin Court, and the Park 1 parking area.

Mitigation Areas

To the greatest extent feasible, any required compensatory mitigation for wetland impacts and other regulated habitats, such as sensitive natural communities, would occur on-site within proximity to the trail alignment. If additional wetland creation areas are required, off-site wetland mitigation would occur within the Project Area as close to wetland impacts as practicable or in the southwest corner of the City's Happy Valley property directly north of the South Fork of Janes Creek and within 0.25 miles of the Project Area.

1.5 Project Construction

1.5.1 Construction Schedule

Construction is anticipated to occur within one or two construction seasons, commencing in approximately 2024 or 2025. If feasible, vegetation clearing outside of the nesting bird season would occur first, by March 15 or after August 15.

1.5.2 Construction Activities and Equipment

All construction activities would be accompanied by both temporary and permanent erosion and sediment control best management practices (BMPs). Project construction would include the following activities:

- Drilling – In support of geotechnical investigations and potential retaining wall or bridge foundations.
- Clearing, grubbing, and tree removal – To clear the trail alignment.
- Grading/Excavation – Throughout the Project Area to achieve grade and dimensions to accommodate the trail, parking areas, and bridges.
- Installation of RSP – In locations where concentrated stormwater discharge would occur or at steep embankment slopes.
- Hauling – Transport of material to and from the Project Area.
- Jackhammering/Grinding – Site preparation/removal of existing material.
- Lighting and Electrical– At select locations throughout the project footprint.
- Concrete Paving and Structures – At sidewalks, curb ramps, curbs, ADA parking stalls, and retaining wall areas.
- Hot Mix Asphalt Paving – Along the trail alignment, driveway crossings, parking areas, and trailheads.
- Gravel placement – Arcata Ridge Trail trailhead parking area, and as engineered fill for base material.
- Striping – Along the trail alignment, and at road/driveway crossings.

- Fence installation – Along some industrial and residential properties.
- Erosion Control – to minimize erosion and prevent sediment from leaving the project area.

Equipment required for construction would include drill rigs, concrete mixer and concrete pumping trucks, snooper truck, compressors, tracked excavators, backhoes, graders, loaders, bulldozers, dump trucks, skid steers, water tender, vibratory rollers, pavers, and pick-up trucks. Jackhammers or similar pieces of equipment may be necessary to support removal of existing material. It is not anticipated that any temporary utility extensions, such as electric power or water, would be required for trail construction. Water from legal sources would be used for dust control, compaction and re-vegetation.

Construction Access

The Project Area would be accessed via the railroad corridor via Sunset Avenue, Larson Park, Todd Court, West End Road, Aldergrove Road, Frank Martin Court, and HBMWD Park 1. New access roads would not be required.

Establish Exclusion Areas and Erosion Control

Biological Studies have identified wetlands in and near the Project Area. Except for areas that would be unavoidably impacted during construction, resource areas to be protected would be identified prior to construction, as discussed in Section 3.3 (Biological Resources). Erosion control Best Management Practices (BMPs) would also be installed prior to construction and maintained until the site is stabilized.

Stockpiling and Staging

Stockpiling and staging areas would be located on developed and/or paved areas and may be located outside the Project Area, including but not limited to the City Corp yard at 4700 West End Road, City parks, and HBMWD property. These areas are included in the overall Project footprint. Project activities at stockpiling and staging areas have been included in environmental analysis.

Potential stockpiling and staging areas are shown on Figures 2A – 2F. Within the stockpiling and staging area, BMPs required under the Storm Water Pollution Prevention Plan (SWPPP, see Section 1.7.1, below) would be utilized to prevent materials and hazardous materials from impacting the environment. Excess soils, aggregate road base, and construction materials would be stored on site within designated stockpiling and staging areas. Excess materials may be re-used onsite for backfill and finish grading. Excess materials would not be stockpiled or disposed of onsite once the Project is complete. The contractor would haul additional excess materials off site for beneficial re-use, recycling, or legal disposal.

1.5.3 Traffic and Access Control

Temporary traffic control including lane closures of City and County roads and the Caltrans overpasses would be required for crossing upgrades. The Contractor would be required to develop a construction traffic control/handling plan for City, County, and/or Caltrans approval prior to construction.

1.5.4 Groundwater Dewatering

Groundwater dewatering is generally not expected but may be required. However, if needed, temporary groundwater dewatering would involve pumping water out of a trench or excavation area. Groundwater would typically be pumped to a settling pond, settling tank, or into a dewatering bag. Dewatering water may also be percolated back into the ground (in uplands). Discharge to regulated waters would not occur.

1.5.5 Site Restoration and Closure

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

revegetation would include replanting and any potential compliance monitoring in support of mitigation required by resource agencies for impacts to regulated habitats, such as wetlands or sensitive natural communities.

1.6 Operation and Maintenance

The City and County would maintain and operate the Annie & Mary Trail as a City or County facility, within their respective jurisdictional areas. Following construction, general operation and maintenance activities associated with the proposed Project would be limited to typical trail maintenance, including annual inspections, trash/debris removal, vegetation management, repaving, and striping. The entire alignment would be maintained by the City and County on an as-needed basis to maintain the trail in good conditions and provide a safe environment for all trail users. HBMWD would maintain the new trailhead at Park 1. Improvements to the US 101 and/or SR 299 overpasses would be maintained and operated by Caltrans. The City would develop a maintenance agreement with HBMWD for the Park 1 trailhead and with Caltrans for the overpass improvements.

1.7 Other Requirements and Considerations

1.7.1 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.

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

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

1.7.2 Required Regulatory Permits

It is anticipated that the Project would impact regulated jurisdictional wetlands. The Project would thus require permits from the U.S. Army Corps of Engineering (USACE) under Section 404 of the Clean Water Act (CWA), and a corresponding Water Quality Certification from the North Coast Regional Water Quality Control Board (Regional Board) Under Section 401 of the CWA. As part of the Section 404 permitting process, the USACE would review the Project under NEPA and Section 106 of the National Historic Preservation Act. Wetlands and other regulated waters impacted by the Project would require compensatory mitigation in coordination with the USACE and Regional Board. Riparian habitat removed by the Project and alteration of culverts would require a California Department of Fish and Wildlife (CDFW) Lake and Streambed Alteration Agreement.

The Project would not adversely affect anadromous waterways; therefore, no consultation with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act is anticipated. The Project is not expected to require consultation with the U.S. Fish and Wildlife Service (USFWS), as potential adverse effects to federal special status plants or wildlife species are not anticipated.

The Project would require a use permit from the County of Humboldt, encroachment permit from the City, and grading permits from the City and County. Project construction within the Caltrans right of way would also require a Caltrans encroachment permit.

1.7.3 Mitigation, Monitoring, and Reporting Program

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

1.7.4 Tribal Consultation

The City provided AB 52 notification letters to representatives of the Blue Lake Rancheria, Bear River Rancheria, and Wiyot Tribe on February 15, 2022. The Blue Lake Rancheria responded on February 24, 2022 and noted the potential for encountering culturally sensitive resources and requested consultation. City representatives met with the Blue Lake Rancheria Tribal Historic Preservation Officer at the Project Area on August 8, 2022. Following the field visit, no additional requests were made and consultation was closed.

The Bear River Rancheria responded on March 7, 2022 and requested cultural monitoring within 600 feet of culturally sensitive areas near and within the Project Area.

The Wiyot Tribe did not respond but was included on correspondence sent to the City from the Blue Lake and Bear River Rancherias. The Cultural Resources Investigation prepared for the Project has been shared with the three tribes.

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:

☒ 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.

_____ _____

David Loya, Community Services Director Date

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?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?		X		
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?		X		
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

Between Sunset Avenue and West End Road, the trail would be located adjacent to US 101. US 101 would be visible from the trail and vice versa. US 101 would be visible to the east, separated from the trail by a metal wire or chain-link fence and vegetation. Portions of the trail would be visible from US 101. The trail would be in the viewshed of Parks, residential and industrial areas, City roads, and open spaces to the west.

Along West End Road, the trail is aligned through the Aldergrove Industrial Park, which includes a variety of industrial and commercial properties. North of the Aldergrove Industrial Park, the trail traverses to the south of SR 299 and the north of Wes Green Landscape Materials, a large commercial soil and compost manufacturer adjacent to the trail alignment. The trail would be visible from Wes Green Landscape Materials and SR 299. SR 299 is visible from the trail along this portion of the alignment.

The trail alignment rejoins West End Road east of Wes Green Landscape Materials. Between Wes Green Landscape Materials and the Park 1 trailhead, the trail alignment becomes more scenic, as West End Road becomes rural, bordered by trees and vegetation. The Mad River would be visible from the trail along this portion of the alignment, however due to the trail elevation and vegetated hillside, the trail would not be easily visible from the Mad River. Residences are also located along this stretch of West End Road.

The off-site mitigation area at the City's Happy Valley property is a former industrial property nested between existing industrial property and the Arcata Community Forest. There are no remaining industrial structures on the property.

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

A scenic vista can be defined as a view that has remarkable scenery or a broad or outstanding view of the natural landscape. The City General Plan identifies scenic resource and landscape features including landforms of Arcata Bay, Bay and ocean views, wooded hillsides, farmland and open countryside, and streamside riparian areas. The Humboldt County General Plan identifies forests, open space and agricultural lands, scenic roads, and wild and scenic rivers as scenic resources within the County. While scenic vistas are present in some portions of the Project Area, particularly along West End Road, the Project will not adversely affect any identified scenic vista.

The Project trail traverses a railroad corridor along highways, industrial areas, and rural West End Road. The trail would have a low profile. The tallest Project features include fencing and streetlights, which would be installed at key locations to increase safety. These elements could be seen from some areas on the hillside to the east of Arcata but would be consistent with the surrounding roadway and industrial viewsheds along the Project Area. The Project would not interfere with open and natural characteristics of the City's scenic vistas. The off-site mitigation location at the City's Happy Valley property is a former industrial property at the end of a dead-end road and is not visible from West End Road or the trail. Wetland and sensitive natural community plantings would enhance the visual character of the Happy Valley property. Therefore, construction and operation of the Project would have no detrimental effect on scenic vistas. No impact would result.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (Less than Significant Impact with Mitigation)

According to the California Scenic Highway Mapping System, there are no designated state scenic highways in the Project vicinity. Highways 101 and 299 are listed as "Eligible State Scenic Highways-Not Officially Designated" (Caltrans 2021b). Arcata is situated at the western gateway to the Trinity Scenic Byway of SR 299, which is a designated National Forest Scenic Byway, and parallels the beautiful "wild and scenic" Trinity River. The portion of SR 299 within proximity to the Project Area does not include the Trinity River, which is located approximately 40-miles inland near the community of Willow Creek. The Project is not located within a Federal or State designated scenic highway or byway.

According to the City's General Plan Design Element, the Project Area is adjacent to and can been seen from portions of US 101 that are designated a coastal scenic highway (Policy D-3a) and portions of SR 299 that are designated a scenic entryway (Policy D-3d). The L. K. Wood Boulevard from the St. Louis Road Overcrossing to 14th Street is designated a non-coastal scenic highway in the Arcata General Plan Design Element (Policy D-3b). The Trail will cross under the St. Louis Road Overcrossing but would not intersect with or be visible from L. K. Wood Boulevard.

The Arcata General Plan includes design standards for projects that could affect scenic highways (Policy D-3c) and scenic entryways (Policy D-3d). The Project would not significantly alter the current view from US 101 and 299 which generally consists of residences, industrial buildings, rural roads, and vegetated and forested hillsides. The Project would not include tall landscaping or other tall features that would interrupt scenic views to the bay or eastward across agricultural lands along US 101. The operation of the Project would not impair views to or from the forested hillside. The City General Plan calls for enhancements such as landscaping and pedestrian enhancements at scenic entryways, which the Project would provide.

The project would be consistent with the County General Plan scenic highway standards, including the creation of a harmonious visual relationship with the surrounding development and natural terrain, screening with vegetation, and not detracting from the scenic quality of scenic roadway (Standard SR-S2).

However, Project construction would require the removal of some trees visible from the US 101 and 299. Tree removal could result in a potentially significant impact to scenic resources. To ensure the Project would not impact scenic highways and entryways as designated in the City's General Plan Design Element, mitigation measure AES-1 would be implemented.

Mitigation

Mitigation Measure AES-1 would reduce the potential visual impacts of the Project related to the loss of vegetative visual screening by requiring replanted native vegetation in specific locations.

Mitigation Measure AES-1: Replanting of Vegetative Visual Screening

The minimum required vegetation required for clearing the trail corridor shall be performed. In general, clearing should be limited to within 5-feet of the edge of grading. Vegetative visual screening removed as part of the project would be replanted in specific locations within the Project Area. Planting locations would be identified in the final 100% construction plans and would include:

- Where practicable, locations where the removal of vegetative visual screening would make Project improvements less visible from US 101 and/or SR 299;
- Where practicable, the small knoll adjacent to US 101 south of Spear Avenue, as defined in City General Plan Policy D-3i-3; and
- Where practicable, locations where visual screening is removed between residences, US 101 or SR 299, and the future trail.

Plantings would include combinations of appropriate native tree and shrub species that mature in height as compatible with the design and adjacent land uses. Planting would occur concurrent with other project revegetation activities.

With the implementation of Mitigation Measure AES-1, potential visual impacts to vegetative visual screening along scenic highways and entryways would be less than significant.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views 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)

The proposed Project would be located in an existing railroad corridor and is not located in an urban area, per CEQA Guidelines Section 15387, because Arcata has a population of less than 50,000. The Project would not significantly degrade the existing visual character or quality of public views and would not conflict with applicable zoning or other regulations governing scenic quality. The proposed Project would improve the visual character of the area by providing an aesthetically enhanced corridor to allow pedestrian mobility throughout the community of Arcata adjacent to residential areas and through industrial/commercial areas. Aside from the required fencing to promote safety at trail and roadway intersections and provide privacy for some businesses and residents, the Project does not include tall visual elements that would block or screen public views. Fences would match the industrial or residential aesthetics. Bridges and trail signage would be consistent with the general aesthetics of other trail elements throughout Arcata in order to provide a consistent aesthetic for trail users and passersby.

The City General Plan Design and Historic Preservation Elements requires the preservation of certain hedgerows, including the “the trees on the small knoll adjacent to State Route 101 south of Spear Avenue” (Policy D-3i-3). Hedgerows, windrows, or rows of trees can provide visual and sound barriers between neighborhoods and between the highway and neighboring uses. The General Plan notes that scenic resources, such as the trees on the small knoll, can provide important aesthetic, visual, and associative links to nature. The trees identified in the General Plan adjacent to US 101 south of Spear Avenue are partly within the Project Area. The Project design would prioritize keeping these trees in place in order to provide habitat, aesthetics, and a visual barrier from US 101. If unavoidable, removal of these trees could constitute a significant impact. In the event that some of these trees would need to be removed to accommodate the project, they would be replanted per Mitigation Measure AES-1 in order to reduce the impact to a less than significant level.

Proposed actions would not conflict with zoning and other regulations governing scenic quality within the City of Arcata and Humboldt County. Overall, the Project is expected to enhance the visual character of the area by providing an aesthetically enhanced trail to allow pedestrian and bicycle mobility throughout the community as well as provide opportunities for nature study and recreation. Off-site mitigation at the Happy Valley property would also enhance the visual character of the former industrial property. By formalizing and controlling public use within the Project Area, existing visual impacts resulting from illegal use via transients and others would be reduced.

However, as a result of construction, some existing vegetation within the railroad corridor would need to be cleared. This could result in a potentially significant impact to adjacent landowners, due to the loss a portion of the vegetative visual screen between their residences, the highway, and the future trail. To ensure the visual impact of vegetation removal is less than significant, Mitigation Measure AES-1 has been incorporated into the Project and thus a less than significant impact would result on the visual characteristic or quality of public views.

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)

Existing sources of night lighting in the Project Area include residential housing, residential streetlights, and exterior lights on commercial and industrial buildings and within parking areas. The Project would include new lighting installation to improve safety in key locations. Lighting would be designed to protect wildlife and nighttime views, including views of the night sky. The Project would be designed to be consistent the Arcata Land Use Code Section 9.30.070, Humboldt County General Plan, and recommendations of the International Dark-Sky Association, which include standards for fixtures, shielding, placement, height, and illumination levels. To comply with these requirements, specific design preferences would include directing light downward and away from other properties, shielding lights, using pedestrian level lights when feasible, avoiding brightly illuminated vertical surfaces where feasible, such as walls and lamp poles, using the minimum lumens necessary, and directing lighting away from sensitive habitat areas. With incorporation of the design considerations mentioned above, light emissions would be minimized. No proposed Project elements would cause substantial new sources of glare. Fencing would be constructed of wood, chain link, cable, picket style, or similar low-glare material. Bridge crossings would be prefabricated steel bridges or similar low-glare material. Due to Project design considerations, potential light or glare impacts 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?			X	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

The Project Area does not include lands currently used for agricultural or forest resource purposes.

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland)? (Less than Significant Impact)

Lands within the Project Area have not been formally analyzed by the Department of Conservation to determine if they meet the criteria for being designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, because the Farmland Mapping and Monitoring Program has not been completed for Humboldt County.

For this analysis, “agricultural soils” and “prime agricultural soils” designations via the Humboldt County WebGIS online mapping tool were utilized, which utilizes soils data from the Natural Resources Conservation Service [NRCS] (Humboldt County 2022). According to the Humboldt County WebGIS, the Project Area includes Prime Agricultural Soil near the West End Road and US 101 Overpass in an area zoned Residential in the former Mad River valley alluvial floodplain. The Project Area also crosses Prime Agricultural Soil at the northernmost portion of the Project Area in a densely developed area zoned for industrial uses. Neither of these locations are compatible with agricultural uses and are not currently used as farmland. The Project does not remove any agricultural land out of production, as there is no such land presently under agricultural use within the Project Area. Therefore, construction and operation of the Project would have a less than significant impact on farmland.

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

There are no agricultural zoned parcels within the City portion of the Project Area. The County portion of the Project Area is zoned Agricultural General. However, it is a forested roadside environment that is not presently or recently been used for agricultural purposes. The Project Area with the agricultural zoning has a low potential to be used for agricultural use due to its current forested condition near incompatible land uses. Zoning within the Project Area is discussed in Section 3.11 (Land Use and Planning).

There are no parcels enrolled in Williamson Act Contracts within the Project Area. Therefore, construction and operation of the Project would have no effect on agricultural zoning or Williamson Act contracts because the Project does not involve any Williamson Act parcels or land uses zoned agricultural that are usable for agricultural purposes. No impact would result.

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

There are no forest lands, timberland, or land zoned timberland production in the Project Area; therefore, no forest land or timberland would be converted to non-forest or non-timberland use. Zoning within the Project Area is discussed in Section 3.11 (Land Use and Planning). Roadside trees and vegetation currently exist along the Project Alignment. Some trees and vegetation would be removed within the railroad corridor during Project construction; however, the Project Area is not zoned forest land and the trees to be removed are not considered forest land resources. No impact would result.

e) Convert Farmland or Forest? (No Impact)

The Project would include the removal of some small trees. However, these trees are generally shrub-like or riparian species and not considered forest resources. Potential biological impacts associated with tree removal are discussed in Section 3.4 (Biological Resources) and impacts related to visual screening are discussed in Section 3.1 (Aesthetics). There are no other changes in the existing environment caused by the Project that would result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use in or adjacent to the Project Area. No impact would result.

3.3 Air Quality

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

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

For construction emissions, the NCUAQMD has indicated that emissions are not considered regionally significant for projects whose construction would be relatively short in duration, lasting less than one year. Construction is expected to require approximately 245 working days to complete and would occur in 2024 and/or 2025. Emissions related to construction were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 and are discussed below (also see Appendix C – CalEEMod Modeling Information and Results).

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

Construction

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

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

To address non-attainment for PM_{10}, the NCUAQMD adopted a Particulate Matter Attainment Plan in 1995. This plan presents available information about the nature and causes of PM_{10} standard exceedances and identifies cost-effective control measures to reduce PM_{10} emissions to levels necessary to meet California Ambient Air Quality Standards. However, the NCUAQMD states that the plan, "should be used cautiously as it is not a document that is

required in order for the District to come into attainment for the state standard" (NCUAQMD 2022). Therefore, compliance with applicable NCUAQMD PM_{10} rules is applied as the threshold of significance for the purposes of analysis. NCUAQMD Rule 104 Section D, Fugitive Dust Emissions, is applicable to the Project.

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

Operation

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

Mitigation

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

Mitigation Measure AQ-1: BMPs to Reduce Air Pollution

The contractor shall implement the following BMPs during construction:

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

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

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

This impact is related to regional criteria pollutant impacts. As identified in Section 3.3 Impact (a), Humboldt County is designated nonattainment of the State's PM_{10} standard. The Project Area is designated attainment for all other State and federal standards. Potential impacts of concern will be exceedances of State or federal standards for PM_{10}. Localized PM_{10} is of concern during construction because of the potential to emit fugitive dust during earth-disturbing activities.

Construction

Localized PM_{10}

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

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

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

Construction Criteria Pollutants

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

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

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

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

CalEEMod version 2020.4.0 was used to estimate air pollutant emissions from Project construction (Appendix C). Construction of the Project is expected to begin in 2024 and require approximately 245 working days to complete. Detailed construction equipment activity and material hauling volumes were provided by the Project's Design Team.

Table 3.3-1 summarizes construction-related emissions for the Project. As shown in Table 3.3-1, the Project's construction emissions are far below the NCUAQMD's stationary sources emission thresholds. Therefore, the Project's construction emissions are considered to have a less than significant impact.

Table 3.3-1 Construction regional pollutant emissions.

Parameter	Emissions (tons per year)			
	ROG	NOx	CO	PM10
Project Construction (2024)	0.2	1.7	1.9	0.2
NCUAQMD Stationary Source Thresholds	40	40	100	15
Significant Impact?	No	No	No	No

Operation

Following construction, the Project would not include any stationary sources of air emissions. Vehicle trips associated with operation and maintenance of the proposed trail would include annual inspections, trash/debris removal, repaving, painting, and repairs as needed. Operation and maintenance of the Project would generate only infrequent trips. However, future larger repairs to the trail 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 with application of Mitigation Measure AQ-1.

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

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). Multiple medical facilities, schools, parks, gyms, and nursing homes are located between 0.25-to 1.0-mile from the Project Area. Sensitive receptors adjacent to the Project Area include residential uses and parks, other sensitive receptors located within 0.25-mile from the Project Area are listed in Table 3.3-2.

Table 3.3-2 Sensitive receptors located within 0.25-mile of the Project Area.

Name	Address	Proximity
Humboldt Educare Preschool/Head Start Daycare	75 Frank Martin Ct, Arcata, CA 95521	Approximately 0.02-mile (125 ft) east of Project Area
Northern Humboldt Community Day School	5610 West End Rd, Arcata, CA 95521	Approximately 0.04-mile (200 ft) west of Project Area
Arcata Elementary School	2400 Baldwin St, Arcata, CA 95521	Approximately 0.18-mile west of Project Area
Arcata High School / Six Rivers Charter High School	1720 M St, Arcata, CA 95521	Approximately 0.25-mile southwest of Project Area south terminus
Cal Poly Humboldt	1 Harpst St, Arcata, CA 95521	Approximately 0.25-mile east of Project Area south terminus
Cal Poly Humboldt Campus Health Center	Plaza Ave, Arcata, CA 95521	Approximately 0.2-mile east of Project Area south terminus
North Country Clinic	785 18th St, Arcata, CA 95521	Approximately 0.2-mile south of Project Area south terminus
Frances Susan J PhD Psychologist	838 17th St, Arcata, CA 95521	Approximately 0.22-mile south of Project Area south terminus
Chase Inc Physical Therapy	5610 West End Rd #107, Arcata, CA 95521	Approximately 0.06-mile west of Project Area south terminus

Project construction activities would occur over approximately 245 working days; however, construction in any one area is not expected to exceed 40 days. Project construction is not expected to include intensive or prolonged construction equipment use for a long duration. Additionally, equipment use would be spread out over a linear project alignment, further reducing the duration of equipment use near individual receptor locations. Due to the short duration (no one area of prolonged or intense construction activity), the Project would not result in the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, the potential construction-related impact would be less than significant.

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

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

The Project would create limited exhaust fumes from gas- and diesel-powered equipment during construction. The likelihood of these odors and emissions reaching nearby receptors is influenced by atmospheric conditions, specifically wind direction. Due to the relative short-term nature of construction, distribution of activities, emissions or odors caused by construction, the Project would not adversely affect a substantial amount of people. Therefore, a less than significant impact would result

Following construction, operation of the trail would not result in any major sources of odor or emissions. Therefore, there would be a less than significant potential impact from Project operations.

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?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

The Project would involve the clearing, grubbing of vegetation and grading within the footprint of the proposed trail. Construction staging areas would be located within the Project Area, within paved or graveled areas or designated previously disturbed areas. Natural habitat is present within the Project Area, and baseline conditions include potential habitat for some special status species, habitats, and aquatic resources, as described further below.

A Wildlife Habitat Assessment, Botanical Report, and Wetlands Constraints Assessment were prepared to assess baseline environmental conditions within the Project Area and to determine the potential for any special status plants, wildlife species, or any sensitive natural communities (SNCs) or aquatic resources to occur (SHN 2022a, SHN 2022b, and SHN 2022c). These assessments are included in the ISMND as Appendix D, E, and F, respectively.

Special status species include those that are federal- or State-listed, State fully protected (FP), State species of special concern (SSC), species on the CDFW Special Animals List (SAL), or State rare, among others. Information in the Wildlife Habitat Assessment, Wetland Constraints Assessment, and Botanical Report was compiled through a review of literature, database searches, and site visits. Database searches encompassed seven U.S. Geological Survey (USGS) quadrangles (quads) centered on the Project Area quad (Arcata North) and the surrounding six quads (Tyee City, Trinidad, Crannell, Panther Creek, Blue Lake, Korbel, Arcata South, and Eureka). Other sources reviewed included the California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) Database, Biogeographical Information and Observation System's Rarefind (BIOS), CDFW Special Animals of California List, and U.S. Fish and Wildlife Service Information for Planning and Conservation (IPaC) tool.

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

Impact analysis in this section is based on the Project's Wildlife Habitat Assessment (SHN 2022a), which identified special status wildlife species with a moderate or higher potential to be affected by the Project and the Project's Botanical Report (SHN 2022b), which assessed the occurrence of special status plants within the Project Area. Construction of the Project would have the potential to impact wildlife species through noise, visual disturbance, and by physically occupying habitat areas as discussed below. Plant species may be impacted during clearing and grubbing, grading, equipment staging, and tree limbing or removal.

If required, off-site mitigation to offset unavoidable impacts to wetlands and/or sensitive natural communities would occur at the City's Happy Valley property. Given the property is a dilapidated former industrial site with compacted soils and sparse vegetation on the periphery of the property and does not include any stream tributaries, special status species would not be detrimentally impacted by the implementation of off-site mitigation. A less than significant impact to special status species would result from implementing wetland and/or sensitive natural communities mitigation at the Happy Valley property.

The operational phase of the Project has little potential to impact special status plant and animal species because motorized vehicles would be prohibited on the trail and no subsequent clearing or grading is expected. In addition, proposed new lighting along the trail would be designed using wildlife-friendly practices (i.e., pointed downward and away from any natural habitat, etc.). As the trail would also be located directly adjacent to an active roadway or along a railroad corridor, increased levels of pedestrian, non-motorized foot traffic are not expected to result in a significant increase in baseline noise levels in the Project vicinity. Operational impacts would be less than significant.

Special Status Plant Species

Special status plant species include those listed as endangered, threatened, or as candidate species by the CDFW, under the California Endangered Species Act (CESA), and/or under the federal Endangered Species Act (ESA). Plant species on the California Native Plant Society's California Rare Plant Ranking (CRPR) Lists 1A, 1B and 2A and 2B are also considered eligible for State listing as endangered or threatened pursuant to the California Fish and Game Code (FGC); the CDFW has oversight of these special status plant species as a trustee agency. As part of the CEQA process, such species should be considered, as they meet the definition of Threatened or Endangered under Sections 2062 and 2067 of the California Fish and Game Code. There are occasions where CRPR List 3 or 4 species might be considered of special concern particularly for the type locality of a plant, for populations at the periphery of a species range, or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology.

Multiple protocol level seasonally appropriate special status plant surveys occurred on May 16, May 19, July 11, and July 12, 2022 along the entire length of the proposed Project. Results of the survey were negative for special status plants (SHN 2022b). Given that it is unlikely that special-status species occur within the study area due to the history of use, disturbed nature of the proposed trail alignment, dominance by non-native species, regular maintenance, and continued disturbance and development along the Project Area and that surveys were negative for special status plants, any potential impact would be less than significant.

Special Status Mammals/Bats

The Wildlife Habitat Assessment identified special status species with a moderate or high potential to occur within or adjacent to the Project Area. Identified species include two species of bats. Special status bat species that have the potential to be present at or near the project area include the Hoary Bat (*Lasiurus cinereus*) and Long-eared Myotis (*Myotis evotis*). Habitat for bats (tree cavities, loose bark, riparian forest, crevices, etc.) is present primarily in the eastern portion of the Project Area. Vegetation and structures in the project area likely provide habitat to a variety of bat species. Construction of the project could significantly impact special-status bat species through the removal or modification of vegetation or structures and due to ground disturbance. This impact is considered potentially

significant. Mitigation Measure BIO-1 has been incorporated into the project to ensure potential impacts to special status bats would be less than significant.

Mitigation

Mitigation Measure BIO-1 would reduce the impact of the project on special status bats to less-than-significant levels by requiring pre-construction surveys by qualified biologists prior to work in applicable habitats, and measures to avoid take of species.

Mitigation Measure BIO-1: Protect Special Status Bats

A qualified biologist shall conduct habitat surveys for special-status bats in the portions of the Project Area where suitable bat habitat is present. Survey methodology should include visual examination of suitable habitat areas for signs of bat use and may utilize ultrasonic detectors to determine if special status bat species utilize the vicinity. Trees with suitable habitat within 150-feet of construction activities would be examined unless they are privately owned outside of the Project Area and permission to access is not provided by the property owner.

Surveys shall be conducted in a manner to detect the presence of hibernating or torpid bats, reproductive colonies and/or migratory stop-over roosts. If no bat utilization or roosts are found, then no further study or action is required. If bats are found to utilize the Project vicinity, or presence is assumed, the following shall be required:

- Consultation with the CDFW to determine appropriate measures for protecting bats with young if present, and for implementing measures to exclude non-breeding bat colonies during construction process; and
- Phased removal of trees where selected limbs and branches not containing cavities are removed on the first day, with the remainder of the tree removed on the second day.

The implementation of Mitigation Measures BIO-1 would protect against potential project impacts to special status bats, sufficiently reducing the potential effect to be less than significant.

Special Status and Migratory Birds

Three special status avian species were observed in the Project Area during the wildlife observational and habitat survey conducted on March 16, 2022. Black-capped Chickadee (*Poecile atricapillus*) and Great Egret (*Ardea alba*) were both observed foraging within the ROW. Osprey (*Pandion haliaetus*) was observed on a nest approximately 475 feet southeast of the northeastern end of the Project Area. Additionally, the Wildlife Habitat Assessment identified several special status, migratory nesting bird species with a moderate or high potential to occur within or adjacent to the Project Area:

- Cooper's Hawk (*Accipiter cooperii*) – high potential (foraging and nesting)
- Sharp-shinned Hawk (*Accipiter striatus*) – moderate potential (foraging)
- Great Blue Heron (*Ardea herodias*) – moderate potential (foraging)
- Vaux's Swift (*Chaetura vauxi*) – moderate potential (nesting)
- Olive-sided Flycatcher (*Contopus cooperi*) - moderate potential (nesting)
- White-tailed Kite (*Elanus leucurus*) – moderate potential (foraging and nesting)
- Merlin (*Falco columbarius*) – moderate potential (foraging)
- American Peregrine Falcon (*Falco peregrinus anatum*) – moderate potential (foraging)
- Bald Eagle (*Haliaeetus leucocephalus*) – moderate potential (foraging and nesting)
- Yellow-breasted Chat (*Icteria virens*) – high potential (foraging and nesting)
- Black-crowned Night Heron (*Nycticorax nycticorax*) – moderate potential (nesting)
- Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) – moderate potential (nesting)

If present in the Project Area or adjacent area during construction activities, special status and protected migratory birds could be injured or killed via clearing and grubbing of vegetation or limbing and removal of trees, and/or potentially displaced from habitat, resulting in a significant impact, unless mitigation measures are incorporated. A potentially significant impact would thus result. Potential Project-related impacts to special status and protected migratory birds would be reduced to a less-than-significant level through the implementation of Mitigation Measure BIO-2.

Mitigation

Mitigation Measure BIO-2 would reduce the potential impact of the Project on protected migratory birds, special status, and nesting birds to a less-than-significant level.

Mitigation Measure BIO-2: Protect Migratory, Special Status, and Nesting Birds

The City shall implement the following to protect migratory, special status, and nesting birds:

- Seasonal avoidance of the August 31 through February 1 nesting season would be utilized when feasible, to avoid impacts on native bird species protected under the federal Migratory Bird Treaty Act and California Fish and Game Code that may be present within the Project Area during construction. Clearing of shrubs or other vegetation for construction or maintenance shall be conducted if possible, during the fall and/or winter months from September 1 through January 31, outside of the active nesting season.
- If vegetation removal or ground disturbance cannot be confined to work during the non-breeding season, the City shall have a qualified biologist conduct preconstruction 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 biologist shall conduct a minimum of one-day preconstruction survey within the seven-day period prior to vegetation removal and ground-disturbing activities within the area of disturbance as well as within a 500-foot buffer for raptors and 100-foot buffer for common native migratory and special status bird species. Due to the linear nature of the Project, survey locations shall coincide with the location of ground disturbance along the Project alignment. 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 survey before Project work is reinitiated.
- If an active nest is found, the qualified biologist would determine the extent of an appropriate construction free buffer zone to be established around the nest and/or operational restrictions in consultation with the CDFW. Buffer zones would be delineated with flagging and maintained until the nests have fledged or nesting activity has ceased. Buffer sizes would take into account factors such as: (1) highway/road and other ambient noise levels, (2) distance from the nest to the highway/road 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 behaviours of the nesting birds.
- If an active nest is identified during construction, construction with 500-feet of the nest shall pause until a qualified biologist is able to determine and establish an appropriate buffer in consultation with CDFW.

With the implementation of Mitigation Measure BIO-2, potential impacts to protected migratory birds, special status, and nesting birds would be less than significant.

Special Status Amphibian and Reptile Species

The Wildlife Habitat Assessment identified special status amphibian and reptile species with a moderate or high potential to occur within or adjacent to the Project Area. The Wildlife Habitat Assessment identified suitable habitat for Northern Red-legged Frogs (*Rana aurora*; SSC) is present in the standing and slow-moving water in the eastern portion of the Project Area. Suitable habitat is also present near the Project Area for the Foothill Yellow-legged Frog

(*Rana boylii*), which are known to occur in the Mad River near the Project Area and could disperse into the Project Area during the non-breeding season. Minimal suitable habitat for the Western Pond Turtle (*Emys marmorata*) is located within the Project Area; however suitable habitat is located immediately adjacent to the eastern portion of the Project Area.

If present in the Project Area during construction activities, these special status species could be injured or killed via crushing, entrapment, or burying (related to ground disturbance), and/or potentially displaced from habitat, resulting in a significant impact, unless mitigation measures are incorporated. Potential Project-related impacts, if any, to these species would be reduced to a less-than-significant level through the implementation of Mitigation Measure BIO-3.

Mitigation

Mitigation Measure BIO-3 would reduce the potential impact of the Project on Northern Red-legged Frogs, Foothill Yellow-legged Frogs, and Western Pond Turtles to a less-than-significant level.

Mitigation Measure BIO-3: Protect Northern Red-legged Frog, Foothill Yellow-legged Frog, and Western Pond Turtle

The City shall implement the following to protect Northern Red-legged Frog, Foothill Yellow-legged Frog, and Western Pond Turtle:

- The City shall retain a qualified biologist to perform a pre-construction survey for the Northern Red-legged Frog, Foothill Yellow-legged Frog, and Western Pond Turtle within seven days prior to commencement of ground disturbance. The survey shall be limited to within 50 feet of suitable habitat within the Project footprint. Suitable habitat would be determined by the City's qualified biologist. The qualified biologist would inspect any work areas containing surface water (not including puddles resulting from rainfall) to ensure tadpoles or frogs are not present. If they are present, the qualified biologist would implement a rescue and relocation operation to move any tadpoles or frogs to a safe location in nearby suitable habitat.
- In the event that a Northern Red-legged Frog, Foothill Yellow-legged Frog, or Western Pond Turtle is observed in an active construction zone, the contractor shall halt construction activities in the area and the frog and/or turtle shall be moved to a safe location in similar habitat outside of the construction zone.
- Construction within areas of standing water shall be limited to the period of the year between July 1 and October 30 to avoid disturbance to breeding frogs unless a qualified biologist evaluates the areas of standing water and determines they are not suitable habitat.

Mitigation Measure BIO-3 requires practicable avoidance and protection measures for Northern Red-legged Frogs, Foothill Yellow-legged Frogs, and Western Pond Turtles during construction, thereby reducing any potential impacts. With the implementation of Mitigation Measure BIO-3, potential impacts to Northern Red-legged Frogs, Foothill Yellow-legged Frogs, and Western Pond Turtles would be less than significant.

Special Status Fish

According to the Wetlands Constraints Assessment (SHN 2022c), there are six streams that occur within the Project Area, including several small, unnamed tributaries along West End Road. A majority of these streams are not expected to have suitable connectivity or spawning substrate for salmonid fish species on account of high gradients, culverts and other urban development bisecting these streams. Janes Creek and South Fork Janes Creek (Class I) may have potential to support connectivity for fish (SHN 2022c), but Project construction would not involve disturbance of Janes Creek or South Fork Janes Creek. The existing culverts on Janes Creek would remain unaltered. No other suitable salmonid habitat occurs within or adjacent to the Project Area. Pacific Lamprey (*Entosphenus tridentatus*) and western brook lamprey (*Lampetra richardsoni*) have moderate potential to occur as suitable habitat and connectivity exists within few, isolated locations of the Project Area.

Creeks within the Project Area, including their riparian habitat, are considered Essential Fish Habitat for salmonid species. The Project would not detrimentally affect any creek or waterways. Culvert upgrades and new bridges over small tributaries would improve watercourses by enhancing hydraulic capacity and sediment routing. Culvert upgrades would not result in a new fish migration barrier. Impacts to riparian habitat would be fully mitigated (see Mitigation Measure Bio-5 – Protect and Implement Compensatory Mitigation for Sensitive Natural Communities). Combined with Mitigation Measure BIO-4 – Protection of Special Status Fish), the Project's potential impact on Essential Fish Habitat would remain less than significant.

Janes Creek and its tributaries are designated as Protected Watercourses by the City of Arcata. As such, an Environmental Buffer Area is required. In areas near existing development, the Environmental Buffer Area shall be no less than 25-feet on both sides of the stream measured from top of bank, per City General Plan Policy RC-2b (1). The City's General Plan requires an Environmental Buffer Area of no less than 100-feet in all other locations (Policy RC-2b (2)). In areas with significant riparian vegetation exceeding 100-feet in width, a buffer of 250-feet is required (Policy RC-2b (3)). Per section RC-2c of the City's General Plan, allowable uses and activities in Environmental Buffer Areas outside the Coastal Zone applicable to the Project include:

– Maintenance of existing roads, driveways, and structures,
– Construction of public road crossings,
– Construction and maintenance of foot trails for public access, and
– Construction and maintenance of utility lines.

The above-listed allowable uses are comprehensive of all Project activities. Thus, the Project does not conflict with the City's Environmental Buffer Areas for Protected Watercourses.

The small, unnamed tributaries (Class III streams) along West End Road drain to the Mad River but were not noted as fish bearing in the Wildlife Habitat Assessment (SHN 2022a). However, upgrades to culverts and installation of new bridges over these small tributaries could result in indirect water quality impacts to the Mad River via sedimentation or an accidental spill, which is located approximately 200-feet downslope of these small drainages. Impairment of water quality in the small, unnamed tributaries and/or the Mad River could significantly impact special status fish. To avoid water quality impacts to these small drainages and the Mad River, Mitigation Measure BIO-4 has been incorporated into the Project.

Mitigation

Mitigation Measure BIO-4 would reduce the potential impact of the Project on special status fish species to a less-than-significant level.

Mitigation Measure BIO-4: Protection of Special Status Fish

The City shall implement the following to protect special status fish:

- Work in wetted waterways shall only occur between June 15 to October 30 during the permitted in-water work window.
- Perimeter sediment control and exclusion fencing to limit the disturbance footprint shall be included in the final design plans to limit ground disturbance near the waterways.
- No refuelling or equipment maintenance shall occur within 100-feet of any wetlands or waterways.

Mitigation Measure BIO-4 requires practicable avoidance and protection measures for special status fish species during construction, thereby reducing any potential impacts. With the implementation of Mitigation Measure BIO-4, potential impacts to special status fish would be less than significant.

Special Status Invertebrates

The Wildlife Habitat Assessment identified special status species with a moderate or high potential to occur within or adjacent to the Project Area. The Monarch butterfly (*Danaus plexippus*) has the potential to be present at or near the

Project Area. There is suitable foraging and resting habitat within the Project Area. Any potential impact to the Monarch butterfly would be less than significant, as there are no significant milkweed nesting habitat or other flowering plant foraging habitat that would be impacted as a result of the Project. The potential impact to the Monarch butterfly would be less than significant.

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

Riparian areas are vegetated areas adjacent to rivers, streams, and lakes with specific overstory and/or understory plant species that meet the definition of riparian by the CDFW and the Regional Board. Riparian habitat is important to stream health and watershed function due to the runoff and nutrients it filters, cooling effect it has on water temperatures, input of wood and organic debris which acts as strata for macroinvertebrates (one of the fundamental blocks of a healthy food web for many aquatic species), channel structure and input of woody debris to enable natural geomorphological changes.

Sensitive natural communities are listed in the CDFW CNDDB due to the rarity of the vegetation alliance in the statement or throughout its entire range. Sensitive natural communities with state rankings of S1 (Critically Imperiled), S2 (Imperiled), or S3 (Vulnerable) are considered in CEQA impact analysis.

The Project Area crosses Janes Creek (Class I stream), South Fork Janes Creek (Class I stream), and Janes Creek Tributary (Class II stream). Additionally, the North Fork of Janes Creek has been modified into an ad hoc ditch system through the Aldergrove Industrial Area. The Project Area is near the Mad River along West End Road and crosses multiple unnamed tributaries (Class III streams) to the Mad River. Work in or around the creeks may involve removal or trimming of riparian habitat (trees and shrubs) to enable access for equipment, and/or for bridge installations. Implementing of off-site mitigation for wetlands and/or sensitive natural communities would be sited to avoid existing sensitive natural communities, if any, that may be present at the Happy Valley property.

Under the City's General Plan, Janes Creek and its tributaries are designated as Protected Watercourses. As such, an Environmental Buffer Area of no less than 250-feet is required where riparian vegetation associated with Janes Creek and its tributaries is 100-feet, measured from top of bank.

Sensitive natural communities, which include riparian habitat, were evaluated in the Project's Botanical Report (SHN 2022b). Five sensitive (S1-S3 ranked) natural vegetation communities were observed within or directly adjacent to the proposed trail alignment. These included:

– *Alnus rubra* riparian forest (Red alder riparian forest, G3S2.2) - Within the study area, this vegetation community was observed in the eastern sections of the project area along streams, as well as along streams within more urban portions of the study area. Red alder riparian forest occurs along the south bank of the Mad River and extends into the study area in places where the ROW is closest to the Mad River. This red alder riparian forest is the highest quality example of this vegetation community within the study area and has a relatively intact, native dominated understory. Urban streams within the Sunset Avenue to West End Road portion of the study area are more impacted and are lower quality with understory of often dense Himalayan blackberry (*Rubus armeniacus*) and other non-native species.
– *Picea sitchensis* forest alliance (Sitka spruce forest, G5S2) - Within the study area, this vegetation community was predominantly found in the eastern section of the project area between West End Road and Park 1. Coastal redwood (*Sequoia sempervirens*) was present as a co-dominant within these areas, with varied, but typically less cover than Sitka spruce. Understory growth within the Sitka spruce forest occurring in the study area included a variety of native and non-native species, including sword fern (*Polystichum munitum*) and Himalayan blackberry. These areas within the Project Area were adjacent to existing residential development, roadside edges, and along areas associated with foot traffic.
– *Scirpus microcarpus* alliance (small-fruited bulrush marsh, G4S2) - Within the study area, this vegetation community was observed in several wetland habitats within and adjacent to the project area. These areas are located throughout the study area, as well as adjacent to the project area in several locations typically in isolated

features. The small-fruited bulrush marsh throughout the study area is characterized by high cover by small-fruited bulrush, typically above 60% relative cover. Most of these isolated features are surrounded by non-native ruderal species or are adjacent to forested areas associated with Sitka spruce forest or coast willow (*Salix hookeriana*).

– *Carex obnupta* alliance (slough sedge sward, G4S3) - Within the study area, this vegetation community was observed within the eastern portion of the study area as well adjacent to the project area in several locations. These areas were often observed in depressions along compacted existing railbed. These communities were also associated with bare soil and litter.
– *Salix hookeriana – Salix sitchensis* Shrubland alliance (Coastal willow thickets, G4S3) -Within the study area, this vegetation was observed within the middle portion of the study area, as well as adjacent to the project area along riparian areas and alongside compacted railbeds. These areas often included wetlands associated with streams and drainages.

In addition to the five sensitive natural communities within the Project Area, stands of the *Sequoia sempervirens* alliance (redwood forest and woodland, G3S3.2) were identified in multiple areas outside of the study area alongside Sitka spruce forest and riparian red alder forest. Small, isolated stands were also identified within the study area, mid-project area. These stands were adjacent to roadways and trafficked areas associated with compacted railbeds. These stands occur the St. Louis Road overpass and do not meet the definition of a sensitive vegetation community as they are planted within an urban setting. Non-native species as well as native species were observed within the understory of the redwood forests.

Construction of the Project has the potential to directly result in temporary and permanent impacts to sensitive natural communities, including riparian habitat. This impact would be significant. Mitigation Measure BIO-5 has been incorporated into the Project to reduce the potential impact to sensitive natural communities, including riparian habitat, to be less than significant.

The operational phase of the Project would have minimal to no impact on riparian habitat and sensitive natural communities because the off-trail hiking would be prohibited by signage in the areas on either side of the trail and the terrain to discourage hiking or camping. Operational impacts would be less than significant.

Mitigation

Potential Project-related impacts to riparian habitat and sensitive natural communities would be reduced to be less than significant through the implementation of Mitigation Measure BIO-5.

Mitigation Measure BIO-5: Protect and Implement Compensatory Mitigation for Sensitive Natural Communities

The City shall implement the following to protect special status botanical habitats:

- Ground disturbance and vegetation clearing and/or trimming would be confined to the minimum area necessary to facilitate Project implementation. Exclusion fencing shall be required to protect sensitive natural communities and wetlands to remain unimpacted near construction work areas within the Project Area. Exclusion fencing shall be shown on the final 100% construction plan set.
- Additionally, the City shall prepare and implement a Habitat Mitigation and Monitoring Plan prepared for the Project and approved by the USACE and the North Coast Regional Water Quality Control Board in executed CWA Section 404 and Section 401 authorizations, which includes:
    - Compensatory mitigation for permanent impacts to riparian and sensitive natural communities shall occur at ratios and locations acceptable to the California Department of Fish and Wildlife. On-site locations shall be prioritized over off-site locations where feasible. The City will complete monitoring and reporting as required by the California Department of Fish and Wildlife.
    - Temporary impacts to sensitive natural communities shall be restored in-place to an equivalent function and extent following the close of Project construction.

- Where feasible, invasive plant species and nuisance litter shall be removed where they occur within and/or near mapped sensitive natural communities within the Project Area.

With the implementation of Mitigation Measure BIO-5, impacts to sensitive botanical habitats would be less than significant.

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)

A Wetlands Constraints Assessment was conducted to ascertain potential wetland locations within the limits of the proposed trail corridor along the Project Area (Appendix F, SHN 2022c). Potential wetland areas were noted based on the observed dominance by wetland vegetation and wetland hydrology. The entire Project Area was assessed except for an approximately 100-foot section where landowner approval was not obtained near Alignment B (Figure 4); additional wetland could exist in this area. Many potential two- and three-parameter wetlands occur within drainage ditches adjacent to the former railbed, within the former railbed itself, and associated with Janes Creek and its tributaries. Potential wetlands within drainage ditches were primarily freshwater emergent wetlands, dominated by hydrophytic annual and perennial herbaceous species. Large drainage ditches adjacent to the former railroad right of way, as well as potential wetlands associated with Janes Creek and its tributaries, were identified as freshwater forested/shrub wetlands. Implementing of off-site mitigation for wetlands and/or sensitive natural communities would be sited to avoid existing wetlands, if any, that may be present at the Happy Valley property.

Within the Project Area, three-parameter wetlands are jurisdictional to the USACE and the Regional Board. Two-parameter wetlands are protected under the City's General Plan, where they occur within the portion of the Project Area that is within City limits per City General Plan Policy RC-3a (2). The Project is located outside of the Coastal Zone; thus, potential one-parameter wetlands were not evaluated.

Based on the 30 percent design, the Project would impact up to approximately 0.62-acre of potential wetlands. An additional 0.09-acre of a managed ditch associated with Wes Green Landscape Material's formal stormwater management program would also be impacted, the ditch is jurisdictional under the Clean Water Act or the state Porter Cologne Water Quality Act. Any temporarily impacted wetlands would be restored in place immediately following construction. Permanent impacts to wetlands would be a significant impact. Thus, Mitigation Measure BIO-6 and Mitigation Measure 7 have been incorporated into the Project to ensure the impact to wetlands remains less than significant, requiring compensatory mitigation.

The City General Plan requires a 50-to 100-foot Environmental Buffer Area for all City wetlands (Policy RC-3c). However, allowable uses and activities allowed in Environmental Buffer Areas include education, scientific research, and use of natural trails. Drainage ditches are also allowed when compatible with wetland function. This Project is consistent with Policy RC-3c due to the intended use of the trail for hiking, equestrian, and nature study. Therefore, the trail is an allowable use within the Environmental Buffer Area.

Mitigation

Mitigation Measure BIO-6 and Mitigation Measure BIO-7 shall be implemented to protect wetlands.

Mitigation Measure BIO-6: Avoidance and Minimization Measures for Waters of the United States and Waters of the State

The City shall implement the following avoidance and protection measures for Waters of the United States, Waters of the State, and two-parameter wetlands protected under the City's General Plan:

1. The City shall attempt to avoid or minimize impacts to wetlands/waters to the greatest extent practical in the final design plans.
2. Environmentally Sensitive Area (ESA) exclusion fencing shall be installed prior to construction to protect juxtaposed remaining wetlands from inadvertent construction-related impacts. The locations of the ESA fencing shall be included on the final 100% design plan set for construction.

Mitigation Measure BIO-7: Compensatory Mitigation for Wetlands Impacts

The City shall complete a wetland delineation to further investigate all areas identified as potential wetlands in the Wetlands Constraints Assessment, as well as any areas that were not previously accessible to field investigations, consistent with City General Plan Policy RC-3a (3). All temporarily impacted three-parameter and two-parameter wetlands shall be restored in place immediately following construction, to an equal or better condition.

The City shall compensate for permanent three-parameter wetlands impacts through restoration, rehabilitation, and/or creation of wetland at a ratio of no less than 1:1.2 and to the satisfaction of permitting agencies. A Habitat Mitigation and Monitoring Plan shall be prepared in coordination with jurisdictional permitting agencies. Compensation for wetlands shall occur so there is no net loss of wetland habitat at ratios to be determined in consultation with and to the satisfaction of jurisdictional permitting agencies. Temporarily impacted wetlands shall be restored in place as part of the Project.

The Habitat Mitigation and Monitoring Plan shall be acceptable to jurisdictional permitting agencies 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.

The City shall compensate for permanent two-parameter wetland impacts consistent with City General Plan Policy RC-3b (3) at a ratio of no less than 1:1 in area and value of wetlands. Mitigation shall consist of creating and maintaining a new wetland of equal or greater functional capacity and value than the wetland to be filled, restoration of previously degraded wetlands, or enhancement of existing wetland areas. Mitigation requirements for two-parameter wetlands shall also be included the Habitat Mitigation and Monitoring Plan.

Mitigation Measures BIO-6 and BIO-7 requires protection of juxtaposed remaining wetlands, 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)

Wildlife movement corridors are areas that connect suitable wildlife habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, peninsulas, or areas with vegetative cover provide wildlife corridors. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas and facilitate the exchange of genetic traits between populations.

The Project Area is located within the Pacific Flyway for migratory birds. However, no large expanses of high-quality natural habitat exist that would support high levels of migratory species stopover use, breeding, or wintering specifically within the Project Area. The movement of migratory birds would not be altered by the Project, and an impact would not result.

The Project would not result in the creation of barriers to fish passage, as no modification to culverts in fish bearing streams are proposed and no in-water work is proposed. All construction involving culverts or bridges over the small tributaries along West End Road would occur during dry stream conditions, and the channels would not be wetted; anadromous habitat has not been documented in these small tributaries. Janes Creek is anadromous; however, the existing Janes Creek crossings would not be modified. Following construction, the proposed Project would not create an impediment to fish movement beyond the existing conditions. No construction or operational impact to fish migration would result.

Riparian habitat can function as a wildlife corridor, especially because the intermittent tributaries pass underneath US 101, which can otherwise serve as a barrier. Maintaining riparian connectivity throughout the Project Area will maintain wildlife habitat and migration corridors. Installation of the proposed bridges or modifications to existing culverts would not substantially alter the ability of wildlife to traverse along the stream corridors. Therefore, installation of bridges would not inhibit or substantially adversely impact wildlife from migrating through the riparian corridor, and a less than significant impact would result.

Some fencing would be installed to direct vehicle traffic near driveways and to provide privacy or security for businesses and residence. Fences would be located near the rail corridor and would not be continuous throughout the entire trail length, allowing people and wildlife to cross the Project Area. Gaps in fencing would exist along driveways, road crossings, and most other areas that are currently without fencing. Thus, terrestrial wildlife would not be impeded by the construction of fences at discrete locations along the Project Area. Any potential impact resulting from the restriction of wildlife movement as a result of the fence would be less than significant.

The Project does not include any features that would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. In addition, the Project would not impede the use of native wildlife nursery sites. The habitat in the Project Area has been fragmented by residential and industrial developments as well and US 101 and SR 299, and the Project would not contribute barriers that exceed existing conditions. A less than significant impact would result.

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

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. Applicable policies include Natural Biological Diversity/Ecosystem (Policy RC-1) and Function, Streams Conservation & Management (Policy RC-2), and Wetlands Management (Policy RC-3).

- The Project would not conflict with maintaining biological and ecological activity and does not conflict with Policy RC-1.
- The Project's encroachment into the Environmental Buffer Areas for Janes Creek is considered allowable under the General Plan; thus, the Project is consistent with Policy RC-2.
- The Project will complete a wetland delineation and mitigation all wetland impacts are required under Policy RC-3.
- The Project's encroachment into the 50-to 100-foot wetland Environmental Buffer Area is an allowable use.

In addition, the City would be required to obtain a City Tree Removal Permit for all trees greater than 16-inch diameter at breast height (DBH). The Tree Removal Permit requires a staff biologist review the trees to be removed for potential nesting birds prior to removal.

The Project is thus consistent with City policies and ordinances protecting biological resources. A less than significant impact would result.

Humboldt County

The Open Space and Conservation Element of the Humboldt County General Plan summarizes policies germane to the protection of biological resources. Applicable policies include Wetland Identification (Policy BR-P1), Development Standards for Wetlands (Policy BR-S10), and Wetlands Defined (Policy BR-S11). Policy BR-S10 established that development standards for wetlands shall be consistent with the standards for Streamside Management Areas. Development within a Streamside Management Area requires a use permit from Humboldt County, which the Project would obtain.

Humboldt County does regulate tree removal 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, as part of the Project's required Use Permit application to the County.

The Project is thus consistent with County policies and ordinances protecting biological resources. A less than significant impact would result.

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)

HBMWD has approved Habitat Conservation Plan for water withdraw in Mad River; however, the Project does not involve the waters of the Mad River and the Habitat Conservation Plan is not applicable to Project. Currently there is not an adopted Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan that covers the Project Area. No impact would result.

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?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

Cultural resources impact assessment is based on results and recommendations from the Phase 1 Cultural Resource Inventory Report prepared by DZC Archaeology & Cultural Resource Management (DZC 2022). DZC reviewed archival material and conducted a pedestrian field survey. Literature reviewed by DZC included documents from the Northwest Information Center of the California Historical Resources Information System, the Native American Heritage Commission, and public documents. The Northwest Information Center results indicated two previously recorded resources within the Project Area (P-12-000717 Northwestern Pacific Railroad, P-12- 000815 Arcata and Mad River Railroad) and two ethnographic locations as either within or adjacent to the Project Area (Wiyot site of interest and California Historic Landmark No. 215 Camp Curtis). The investigation confirmed a landscape with ties to the Wiyot peoples and identified historic era development that included railroad operations to support the logging and shipping industries.

Results of the field survey by DZC included the identification and recordation of new linear segments associated with previously recorded resources P-12-000717 (Northwestern Pacific Railroad) and P-12-000815 (Arcata and Mad River Railroad/California Historic Landmark No. 842) within the Project Area. There was no field evidence for the presence of the ethnographic sites within the Project Area.

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

As feasible, the Project will include recommendations from the Cultural Resource Current Conditions Report (DZC 2019) specific to railroad related elements (ties, rails, spikes, switches) that are proposed for removal from the line to accommodate construction. These elements would be purposefully re-used for interpretive purposes. Examples may include, but are not limited to, incorporating ties or rails into the structural elements such as fences, gates, directional or interpretive signage, or refashioning spikes as mile markers.

Two historic era resources are present within the Project Area: P-12-000717 (Northwestern Pacific Railroad) and P-12-000815 (Arcata and Mad River Railroad/California Historic Landmark No. 842). The Project proposes to physically remove the steel railroad rails associated with P-12-000717 (Northwest Pacific Railroad) and P-12-000815 (Arcata and Mad River Railroad/California Historic Landmark No. 842) within the Project Area. This is a direct physical effect on both resources, one of which is a feature associated with a listed California Historic Landmark.

The entirety of resource P-12-000815 (Arcata and Mad River Railroad) is a listed California Historic Landmark and therefore a historic resource under CEQA. However, the segment within the Project Area is not a contributing element to the larger historic property encompassing the Arcata and Mad River Railroad, nor does the segment appear to meet the criteria for eligibility as individual properties for the National Register of Historic Places / California Register of Historic Resources, to include the observation that the segment lacks integrity. Additionally, the portion of P-12-000815 that was established as California Historic Landmark No. 842 (Arcata and Mad River Railroad/California Historic Landmark No. 842) is outside of the Project Area and is unaffected by this Project. As such, the removal of the steel track portion of the railroad within the Project Area is a less than significant impact to the features of this resource (DZC 2022).

Based on the results from the Cultural Resource Inventory, the second historic era resource within the Project Area, a segment of P-12-000717 (Northwestern Pacific Railroad), does not qualify as a historic resource under California Environmental Quality Act, nor have the potential to be a contributor to any larger historic property encompassing the Northwestern Pacific Railroad. Further, the segments within the Project Area do not meet the criteria for eligibility as individual property for the National Register of Historic Places / California Register of Historic Resources. As P-12-00717 (Northwestern Pacific Railroad) is not a historic resource under CEQA, there is no impact to be considered. Therefore, the Project will have a less than significant impact to the P-12-000717 resource (DZC 2022).

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

The record and literature search of the Cultural Resource Inventory revealed two ethnographic resources are noted as adjacent to or in the vicinity of the Project Area, neither of which has been officially located or recorded. Upon field surveys and consultation with local tribes, neither resource was located. As the resources are unlocatable, cultural and/or archaeology monitoring within proximity to these resources would not occur. In the event ethnographic resources are encountered during construction, Mitigation Measure CR-1 would be implemented to ensure any potential impact would be less than significant.

The potential off-site wetland and sensitive natural communities mitigation area at the City's Happy Valley property was not investigated as part of the Cultural Resources Inventory completed for the Project. Shallow excavation would be required to construct new wetland habitats. The Happy Valley property is a former mill site with substantial prior soil disturbance and grading. While highly disturbed, the potential for inadvertent discovery remains. Therefore, Mitigation Measure CR-1 would be applied to any ground disturbing activities at the Happy Valley property alongside Mitigation Measure CR-2.

Mitigation

Implementation of Mitigation Measure CR-1 and Mitigation Measure CR-2 would reduce the potential impact to archaeological resources by requiring procedures that shall be taken in the event of inadvertent discovery

Mitigation Measure CR-1: Protection of Archaeological Material

The City shall implement the following to protect archaeological resources:

- A pre-construction meeting shall be held with field contractors, where the protocols for inadvertent discovery (described below) would be communicated.
- If cultural materials for example: chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work shall be stopped within 20-meters (66-feet) of the discovery. Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendations for further action. Tribal representatives shall be notified.

Mitigation Measure CR-2: Identification and Protection of Cultural Resources at the Happy Valley Property

If the City implements off-site wetland creation mitigation at the Happy Valley property, the following shall be implemented:

- The City shall complete a Cultural Resources Investigation that includes the area to be disturbed. The final report shall be shared with appropriate THPOs of Wiyot Tribe, Bear River Rancheria, and Blue Lake Rancheria. Recommendations of the investigation, if any, shall be implemented by the City; and
- The City shall provide formal notification letters to Wiyot Tribe, Bear River Rancheria, and Blue Lake Rancheria notifying them of the planned activity and location a minimum of 90 days in advance of ground

disturbance. Any comments from the tribe requesting cultural and/or archaeological monitoring shall be implemented by the City.

Implementation of Mitigation Measure CR-1 and Mitigation Measure CR-2 would reduce the potential impacts to a less-than-significant level during construction because a plan would be implemented to address discovery of unanticipated archaeological resources and to preserve and/or record those resources consistent with appropriate laws and requirements.

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

Portions of the Project Area are considered archaeological sensitive. In the event human remains are encountered during construction, including wetland creation at the off-site Happy Valley property, Mitigation Measure CR-3 would be implemented to ensure any potential impact would be less than significant.

Mitigation

Implementation of Mitigation Measure CR-3 would reduce the potential impact to human remains by requiring procedures that shall be taken in the event of inadvertent discovery.

Mitigation Measure CR-3: Inadvertent Discovery of Human Remains

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

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

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?		X		
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

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

Construction of the Project would involve a variety of earthwork and construction practices, involving the use of heavy equipment as discussed in Section 3.3 (Air Quality). Construction would require the use of fuels, primarily gas, diesel, and motor oil. Construction emissions were estimated using CalEEMod version 2020.4.0 and were estimated to be approximately 402.7 $MTCO_2e$ from all construction activities (Appendix C). The Project's construction emissions equal 13.42 $MTCO_2e$ per year when annualized over the assumed 30-year lifespan of the Project. Peak travel associated with Project construction would consist of approximately 30 vehicular round trips per day, and construction equipment would remain staged in the Project Area once mobilized. Excess soils and construction materials would be stored on-site within previously designated staging areas only. Excess soils may be re-used on-site for backfill and finished grading. Excess soils would not remain stockpiled on-site once the Project is complete. The contractor may haul additional excess soils off-site for legal use at other permitted sites.

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

Operation of the Project would include periodic maintenance including annual inspections, trash/debris removal, drainage maintenance, vegetation management, infrequent paving repair, repaving, and striping. In the event of storm damage, more significant repairs to the trail may be needed. These activities would generally be supported by vehicles and use of hand-held tools. The use of fossil-fuel powered equipment to support these operational and maintenance activities would be periodic and short-term (occurring intermittently). These activities would not result in a substantial increase in energy use, and would not result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources. By promoting bicycle and pedestrian transit, the Project would have a beneficial reduction on energy resources consumed by automobiles.

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

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

The Project would not conflict with or inhibit the implementation of the State Energy Action Plan, Senate Bill (SB) 1389, SB 100, Assembly Bill (AB) 1007, or other State regulations. The Project would not inefficiently utilize energy due to incorporation of Mitigation Measure AQ-1, which limits idling time and provides measures to protect air quality.

The Project would temporarily require the use of equipment in order to construct the components of the Project; however, these activities would be temporary and would not interfere with the broader energy goals of the State. Operationally, the Project would reduce automobile-related energy consumption by promoting and supporting pedestrian and bicycle transit. The Project would include solar or electrical lighting in key locations. Electrical lighting would require a small amount of electricity and would not conflict or obstruct state or local plans for renewable energy or energy efficiency. The majority of California's energy-related plans are not directly applicable to the Project or its operations; however, the Project complies with those plan requirements that apply. The Project would therefore not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. 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.				X
ii. Strong seismic ground shaking?			X	
iii. Seismic related ground failure, including liquefaction?				X
iv. Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

The Project is located within a railroad corridor that traverses residential, industrial, and rural areas with generally flat terrain. Regional geology is likely influenced by seismic activity as a result of the relatively close proximity of the Mendocino Triple Junction to the Project. The Project is located near the Mad River Fault Zone (Humboldt County 2022). The Project Area is predominantly comprised of Dungan soils and Timmons and Lepoil soils with zero to two percent slopes; seven other soil associations that each cover less than 8% of the Project Area are listed in the Custom Soil Resource Report (NRCS 2022). A small portion of the Project Area, along West End Road near Park 1, contains Lepoil-Espa-Candymountain complex soils with 15 to 50 percent slopes and Coppercreek-Slidecreek-Lackscreek complex soils, 30 to 50 percent slopes (NRCS 2022).

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

According to the California Geological Survey (CGS), there are no Alquist Priolo Fault Zones in the Project Area (CGS 2022). Three faults within the Mad River Alquist Priolo Fault Zone are within 0.05-to- 0.5-mile of the Project Area, including the McKinleyville Fault near Park 1, Mad River Fault north of SR 299, and Fickle Hill Fault south of Sunset Avenue. Project activities, which include shallow excavation and repaving, would not rupture faults in the Mad River Fault Zone or any other known fault. No impact would result.

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

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

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

Under existing conditions, the Project Area is primarily within a former railroad corridor and does not contain residences; however, residences and businesses are located adjacent to the Project Area and near the trail along West End Road. In the event of an earthquake, the Project would increase exposure to strong seismic ground shaking to anticipated pedestrians and bicyclists utilizing the proposed trail.

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

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

Liquefaction is the transformation of saturated, loose, fine-grained sediment to a fluid-like state because of earthquake shaking or other rapid loading. Liquefaction is known to occur in loose or moderately saturated granular soils with poor drainage. The Project is located in an Area of Potential Liquefaction according to the Humboldt County WebGIS (Humboldt County 2022) and in areas with moderate liquefaction according to City's Hazards Map (City of Arcata 2020a). The proposed Project would not include residential development, occupied structures, or critical facilities that would be subject to liquefaction. Implementation of the Project would not exacerbate potential liquefaction, rather the potential for liquefaction would remain unchanged following Project implementation.

The Project Area within the former railroad corridor is generally flat and gently sloping. A segment of the Project alignment within the Humboldt County portion of West End Road, extending to HBMWD's Essex Control Center near Park 1 trailhead, has cross slopes greater than 15% in some locations and 30-50% in other locations. Where required to maintain slope stability, the Project design would incorporate retaining walls or similar erosion control features to avoid potential mass wasting and erosion. Two retaining walls would be constructed to reduce the potential for slope instability, future erosion, and risk of siltation. Retaining walls would be constructed along a segment of trail near SR 299 and along Trail Alignment Scenario B (Figure 4).

The design would include stairs and ramps in discrete locations near Giuntoli Lane to provide access to the trail from existing parks or roadways. The Project would be constructed to California Building Code requirements and is proposed adjacent to an existing roadway and buildings which are underlain by the same soils as previously identified. Therefore, the soils are not considered unstable. Implementation of the Project would have no impact on liquefaction and a less than significant impact on landslides or otherwise unstable soils.

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

Construction activities, including excavation, grading, soil compaction, and operation of heavy machinery would disturb soil and, therefore, have the potential to cause erosion. Erosion and sediment control provisions prescribed in the City of Arcata and Humboldt County Municipal Codes, Construction General Permit, and the SWPPP (Environmental Protection Action 1) would be required as part of the Project. Erosion control prevention would include silt fences, straw wattles, soil stabilization controls, and site watering for controlling dust. Erosion control prevention to stabilize soils and minimize the potential transport of sediment to receiving waters during and post construction.

Erosion control prevention would also occur at the off-site Happy Valley property in associated with any grading needed to construction mitigatory wetlands. Therefore, the potential soil erosion impact from construction would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (Less than Significant Impact)

The Project does not propose the installation or modification of septic tanks or wastewater disposal systems. Increased use of the Park 1 trailhead could increase use of the existing Park 1 bathrooms and associated septic tank. This impact is expected to be minimal and not exceed the capacity and expected use of the septic tank, therefore no additional restrooms and septic tanks are proposed. Therefore, construction and operation of the Project would have a less than significant impact.

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

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

It is unlikely that Project construction would impact potentially significant paleontological resources. The Project does not involve any deep excavation that would be more likely to result in the inadvertent discovery of paleontological resources. In the unlikely event that fossils or other paleontological resources are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), construction activities would be diverted away from the discovery within 50-feet of the find, and a professional paleontologist would be notified to document the discovery as needed, to evaluate the potential resource, and to assess the nature and importance of the find, as a matter of City and County policy. The potential impact would be less than significant.

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

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

The NCUAQMD recommends considering the greenhouse gas (GHG) emission CEQA methodology and thresholds from the BAAQMD. For Project construction, BAAQMD does not have quantitative GHG emission thresholds (BAAQMD 2017). Rather, the BAAQMD states that a lead agency should disclose GHG emission information and determine significance in relation to meeting AB 32 GHG reduction goals. For land use development projects, the BAAQMD's adopted guidance provides three options: compliance with a qualified GHG Reduction Strategy; or a 'bright-line' annual emissions of less than 1,100 metric tons of carbon dioxide equivalent (MTCO2e); or an efficiency metric of 4.6 $MTCO_2e$ per service population per year. For the purposes of this Project, the City has identified the bright-line threshold of 1,100 $MTCO_2e$/year as the appropriate threshold of significance for the Project.

Project construction activities would result in exhaust emissions from on-road trucks, worker commute vehicles, and off-road heavy-duty equipment. Construction would require clearing, earthmoving, and delivery equipment, as used for similar Projects, and which have been accounted for in the State's emission inventory and reduction strategy for both on and off-road vehicles. Construction emissions were estimated using CalEEMod version 2020.4.0 and were estimated to be approximately 402.7 $MTCO_2e$ from all construction activities. The Project's construction emissions equal 13.42 $MTCO_2e$ per year when annualized over the assumed 30-year lifespan of the Project. Emissions during construction would not be a considerable contribution to the cumulative GHG impact, given that construction would be temporary, of short duration, and would not require a large fleet of earthmoving equipment and soil off-hauling beyond the normal equipment and activities related to such Projects. Therefore, the Project's construction-related emissions would be less than significant.

Project operation and maintenance would generate less than one traffic trip per week on average with motorized access limited to light maintenance and emergency service vehicles. The BAAQMD's (2017) Air Quality Guidelines provides screening criteria for determining if a Project could potentially result in significant operational impacts from GHG. As provided by the BAAQMD's CEQA Air Quality Guidelines, if the Project is less than the screening level, and is consistent with the methodology used to develop the screening criteria, then its GHG emissions would not exceed the bright-line threshold and would be considered less than significant.

The applicable operational GHG screening level is 600-acres for a municipal park. Given the small Project footprint (less than 10-acres), the Project would be substantially less than the BAAQMD's operational GHG screening level for a municipal park. Additionally, by promoting bicycle and pedestrian transit, the Project would have a beneficial reduction on energy resources consumed by automobiles. Therefore, Project operation would result in a less than significant impact on GHG emissions.

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

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

Project construction would cause a temporary increase in GHGs; however, as discussed above Project emissions would not exceed the identified emission thresholds. Project construction is analyzed for consistency with the 2017 Climate Change Scoping Plan in Table 3.8-1 – Consistency Analysis Between Project and Climate Change Scoping Plan.

Table 3.8-1 Consistency analysis between Project and Climate Change Scoping Plan.

Scoping Plan Reduction Measures	Consistency/Applicability Determination
California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.	**Consistent**. This is a statewide measure that cannot be implemented by the project or lead agency. PG&E obtains 66 percent of its power supply from renewable sources such as solar, wind, and geothermal, in conformance with various regulations (PG&E 2021). The Project would utilize PG&E power.
California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	**Consistent**. This is a statewide measure that cannot be implemented by the project applicant or lead agency. However, the standards would be applicable to the light-duty vehicles that would access the Project Area during construction.
Energy Efficiency. Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	**Not Applicable**. This is a measure for the state to increase its energy efficiency standards in new buildings. The Project would not result in new habitable buildings subject to the energy efficiency standards.
Renewable Portfolio Standard. Achieve 33 percent renewable energy mix statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.	**Not Applicable.** This is a statewide measure that cannot be implemented by the project or lead agency.
Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard.	**Consistent**. This is a statewide measure that cannot be implemented by the project or lead agency. The standard would be applicable to the fuel used by vehicles that would access the Project Area during construction.
Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375.	**Not applicable.** This is a statewide measure calling for the development of GHG emission reduction targets.
Vehicle Efficiency Measures. Implement light-duty vehicle efficiency measures.	**Not applicable.** This is a statewide measure that cannot be implemented by the Project applicant or lead agency.
Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	**Not applicable.** The Project does not propose any changes to modes of transportation of goods.

Scoping Plan Reduction Measures	Consistency/Applicability Determination
Million Solar Roofs Program. Install 3,000 MW of solar-electric capacity under California's existing solar programs.	**Not Applicable.** The Project does not involve structures with roofs.
Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.	**Not applicable.** This is a statewide measure that cannot be implemented by the Project applicant or lead agency.
Industrial Emissions. Require assessment of large industrial sources to determine whether individual sources within a facility can cost- effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.	**Not applicable.** This measure would apply to the direct GHG emissions at major industrial facilities. The Project is not industrial.
High Speed Rail. Support implementation of a high-speed rail system.	**Not applicable**. This is a statewide measure that cannot be implemented by the Project or lead agency. The Project does not involve a high-speed rail system.
Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	**Not Applicable**. This is a measure for the state to increase its energy efficiency standards in new buildings. The Project would not result in new habitable buildings subject to the energy efficiency standards.
High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases.	**Not Applicable**. The Project would not include air conditioners or commercial refrigerators.
Recycling and Waste. Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	**Consistent.** The Project does not include a landfill. The Project would reduce construction waste with implementation of state mandated recycling and reuse mandates.
Sustainable Forests. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	**Not Applicable**. The Project is located in a rural setting and would not affect forestland. Additionally, the Project would not include areas suitable for reforestation. The Project would replant most native trees removed during construction.
Water. Continue efficiency programs and use cleaner energy sources to move and treat water.	**Not Applicable**. The Project would not include an increase in water consumption or energy use associated with water treatment or transport.
Agriculture. In the near-term, encourage investment in manure digesters and at the five- year Scoping Plan update determine if the program should be made mandatory by 2020.	**Not applicable.** The Project does not include agricultural production.

Source of Scoping Plan Reduction Measures: CARB 2017

As described in Table 3.8-1, the Project is consistent with AB 32, as outlined in the 2017 Climate Change Scoping Plans. Therefore, the Project would not conflict with AB 32 or the 2017 Climate Change Scoping Plan and 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?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		X		
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

The Project is located along an inactive 3.5-mile segment of railroad corridor, between Sunset Avenue and HBMWD Park 1 (Figure 1 – Vicinity Map).

The Phase 1 Environmental Site Assessment (SHN 2010) was used to support impact analysis related to hazards and hazardous materials for the portion of the Project Area within the County's jurisdiction on West End Road. The 2010 Phase 1 Environmental Site Assessment does not cover the balance of the trail alignment in the City's jurisdiction. To inventory hazardous resources for the portion of the Project Area excluded by the 2010 Phase 1 Environmental Site Assessment, a current regulatory database review was completed to identify areas of potentially impacted soil and/or groundwater within and near the Project Area that could potentially pose an exposure risk to humans and/or the environment. As described in Impact (d), the database review identified sites that government regulatory agencies have reported as having environmental concerns, such as releases of contaminants to the soil and/or groundwater, underground storage tanks (USTs) or use of hazardous materials.

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

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

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

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

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

Project construction would be required to implement stormwater management requirements during construction in accordance with the State Water Resources Control Board General Construction Storm Water Permit (Section 1.7.1 – Environmental Protection Action 1). Stormwater management requirements for addressing materials management would be required, including proper material delivery and storage, spill prevention and control, and management of concrete and other wastes, as described in Section 3.10 (Hydrology and Water Quality).

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

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

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

Soil and/or groundwater contamination associated with historical railroad operations may be potentially present within the railroad prism. The Project Area is located along the NWPRR and AMRRR historical railroad alignments; thus, Project construction has the potential to disturb remnant contaminants in soil, groundwater, and/or vestige railroad ties. Known contaminated soil, groundwater, and hazardous materials would require special handling and disposal during Project construction. Railroad ties, potentially treated with creosote or other preservatives, should be presumed to require special handling and disposal as Treated Wood Waste These contaminants could result in a potentially significant impact. To account for the potential presence of unknown contaminants in soil and groundwater a Sampling Analysis Plan (SAP) would be prepared to direct soil and groundwater characterization sampling for specific

contaminants of concern within the Project Area as described in Mitigation Measure HAZ-1. Once pre-characterization is complete and depending on whether contaminants of concern are present above regulatory thresholds, a project-specific Soil and Groundwater Management Plan (SGMP) and/or a Soil Excavation, Stockpiling and Transportation Plan (SESTP) would be prepared.

A regulatory database review of Cal/EPA Cortese List (Cal/EPA 2022), including the SWRCB GeoTracker (SWRCB 2022), and DTSC EnviroStor (DTSC 2022). The SWRCB GeoTracker records review identified numerous closed sites within a 1/8-mile of the Project Area, however only one active cleanup site is located within the search radius (Table 3.9-2). The site is outside the Project Area and independent from the Project.

Additionally, contaminants may be present in soil and/or groundwater along the railroad alignments. Depending on the location of excavation and soil disturbance established during future design phases, workers could potentially be exposed to hazardous materials during Project construction activities that disturb soil and create dust, such as earthmoving, driving on dry exposed soil, or other dust-generating work.

Table 3.9-2 Open hazardous materials sites located within 1/8-mile of the Project Area.

Reference Number	Name	Address	Project Type	Status	Contaminants of Concern
T10000003375	Raliberto's Tacos/Former Chevron	1811 G Street, Arcata, CA 95521	LUST Cleanup Site	Open – Site Assessment as of 8/25/2014	Diesel, Waste Oil, Motor, Hydraulic/ Lubricating Fluids

Notes:

- LUST = Leaking Underground Storage Tank
- LUST Cleanup Sites = includes all Underground Storage Tank (UST) sites that have had an unauthorized release (i.e., leak or spill) of a hazardous substance, usually fuel hydrocarbons, and are being (or have been) cleaned up.
- Cleanup Program Site = includes all non-federally owned sites that are regulated under the State Water Resources Control Board's Site Cleanup Program and/or Regional Water Quality Control Board programs.

The 2010 Phase 1 Environmental Site Assessment recommended the characterization of potentially impacted soils or other materials disturbed or excavated during construction of the trail. To reduce potential impacts related to disturbance of contaminated soils or other materials during construction, Mitigation Measure HAZ-1 has been incorporated into the Project.

Improvements to the US 101 Sunset Avenue Overpass and SR 299 Giuntoli Lane Overpass bridge structures would be necessary to accommodate Project user access. Improvements to these two overpasses would include impaction of guardrails, road surface, and bridge structural elements. Materials associated with these bridge components could potentially contain asbestos. As included in Mitigation Measure HAZ-1, to mitigate the potential for airborne asbestos fiber release during Project construction, a survey must be conducted prior to renovation and/or demolition work to identify and sample suspect Asbestos Containing Materials in compliance with the USEPA National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations, per Title 40 CFR Section 61, Subparts A and M.

Prior to the commencement of Project construction, the NESHAP survey would be submitted to the NCUAQMD, the local USEPA delegated authority with responsibility for administering the NESHAP rules within the Project area. Based on the findings of the NESHAP survey, ACM identified at the overpasses within the Project Area would be properly removed in accordance with Cal/OSHA regulations prior to other Project construction. With adherence to the NESHAP requirements enforced by the NCUAQMD and worker protection rules enforced by Cal/OSHA, the potential hazard associated with the disturbance of asbestos would be less than significant.

The Project would utilize heavy machinery to perform construction-related tasks including grading, excavation, and transportation of materials. During any construction project involving operation of equipment, there is the possibility for an accident to occur, and fuel to be released onto the soil. A potentially significant impact could result from an accidental spill, especially in proximity to a wetland or waterway. This potential impact is addressed under Mitigation Measure BIO-4 (see Section 3.4 – Biological Resources). Mitigation Measure BIO-4 includes requirements to avoid refueling and equipment maintenance near streams and wetlands. Under Mitigation Measure BIO-4, equipment shall not be refueled within 100-feet of any perennial wetlands or waterways as well as other requirements as described in

Mitigation Measure BIO-4 to protect the environment from the accidental release of hazardous materials. With the incorporation of Mitigation Measure BIO-4, any potential impact related to streams and wetlands from an accidental spill would be less than significant.

Mitigation

Mitigation Measure HAZ-1 would reduce the impact of potential exposure from potential hazardous materials to construction workers, nearby receptors, and the environment to a less-than-significant level by conducting site soil, groundwater, and asbestos investigations and requiring the proper handling and disposal of hazardous wastes per applicable local, state and federal regulations and/or guidelines.

Mitigation Measure HAZ-1: Characterize Existing Soil and Groundwater Conditions Within Project Area

The City shall complete the following requirements to characterize the soil and groundwater in areas with the potential for contamination within the disturbance footprint, including any required excavation at the off-site Happy Valley property identified for wetland mitigation by completing a new Phase 1 Environmental Site Assessment for the portion of the Project excluded from the 2010 Phase 1 Environmental Site Assessment.

- If recommended in the new Phase 1 Environmental Site Assessment, a Sampling Analysis Plan (SAP) shall be prepared by the City to define sample locations, boring depths based upon design, estimated soil volumes, and number of borings to adequately pre-characterize project alignment soils and/or groundwater for the portions of the Project Area that align with the former railroad corridor. The SAP shall include pre-characterization of soil and groundwater for potential constituents of concern (COCs) prior to initiating construction activities. Alternatively, soil spoils can be initially field screened (visual, olfactory, photo-ionization detector, etc.) and stockpiled, then subsequently characterized for appropriate disposal methods according to applicable waste facility requirements.
- If recommended in the new Phase 1 Environmental Site Assessment and prior to construction of the Project, pre-characterization soil and/or groundwater sampling shall be conducted at SAP identified locations within the limits of planned ground disturbance.
- If pre-characterization sample analysis determines COCs above regulatory background thresholds for human and environmental health exposure, then a site-specific Soil and Groundwater Management (SGMP) shall be prepared to address proper handling of potentially impacted soil and groundwater prior to waste stream characterization, proper disposal, and handling requirements for worker protection. Any groundwater encountered during construction proximal to known adjacent impacted properties shall be characterized prior to legal disposal. Any soil/and or groundwater determined to exceed thresholds for constituents of concerns shall be handled and disposed of pursuant to applicable to California regulations, to be detailed in the SGMP. The SGMP shall be reviewed and approved by the City prior to construction.
- Where Project construction design proposes to include demolition or deconstruction of existing structures (bridges), subsequent pre-demolition hazard materials sampling shall occur for asbestos in accordance with US Environmental Protection Agency National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations.

The implementation of Mitigation Measure HAZ-1 would reduce the impact of potential exposure from potential hazardous materials to construction workers, nearby receptors, and the environment to a less-than-significant level.

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)

The railroad corridor is bordered by public facilities, and residential, commercial, and industrial uses (Figure 2A - Figure 2F – Project Overview). As listed in Table 3.9-1, there are schools located within 0.25 mile the Project Area.

Table 3.9-1 Schools located in proximity to the Project Area.

Name	Address	Proximity
Humboldt Educare & Head Start Preschool	75 Frank Martin Ct, Arcata, CA 95521	Approximately 0.01-mile (45 ft) east of Project Area
Northern Humboldt Community Day School	5610 West End Rd, Arcata, CA 95521	Approximately 0.04-mile (200 ft) west of Project Area
Laurel Tree Charter School	4555 Valley W Blvd, Arcata, CA 95521	Approximately 0.42-mile northwest of Project Area
Trillium Charter School	1464 Spear Ave, Arcata, CA 95521	Approximately 0.30-mile west of Project Area
Arcata Elementary School	2400 Baldwin St, Arcata, CA 95521	Approximately 0.18-mile west of Project Area
Arcata High School / Six Rivers Charter High School	1720 M St, Arcata, CA 95521	Approximately 0.25-mile southwest of Project Area south terminus
Cal Poly Humboldt	1 Harpst Street, Arcata, CA 95521	Approximately 0.25-mile east of Project Area south terminus
Stewart Elementary School	1125 16th St Suite 106, Arcata, CA 95521	Approximately 0.35-mile southwest of Project Area south terminus
Arcata Christian School	1700 Union St, Arcata, CA 95521	Approximately 0.60-mile southeast of Project Area south terminus

Humboldt Educare & Head Start Preschool, Northern Humboldt Community Day School, Arcata Elementary School, Arcata High School / Six Rivers Charter High School, and Cal Poly Humboldt are located within 0.25-mile of the Project Area. The Project includes the use of heavy machinery, which would emit hazardous emissions such as carbon monoxide and are assumed to include the use of hazardous materials such as fuels, lubricants, degreasers, paints, and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in small quantities. As discussed in Impact (b) above, 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. 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.

Project operation would not include a new stationary source of hazardous emissions or handling of acutely hazardous materials or waste; thus, a less than significant impact would result from Project operations.

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 Impact with Mitigation)

The Project Area is not located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Outside the Project Area, but within one-eighth (1/8) mile of the Project, there are various hazardous materials sites based on a database review conducted by GHD in March 2022. As part of the database review, governmental records were consulted from the Cal/EPA Cortese List, including the SWRCB GeoTracker, and DTSC EnviroStor databases.

The Project Area is not located on, or within 1/8-mile of a site listed in the DTSC EnviroStor database (DTSC 2022). Further, the Project Area is not located on or within 1/8-mile of a site included in the Cal/EPA's list of Sites Identified with Waste Constituents Above Hazardous Waste Levels Outside the Waste Management Unit, nor is the Project Area

located on or within 1/8-mile of any site included in Cal/EPA's list of active Water Board Cease and Desist Orders and Cleanup and Abatement Orders (Cal/EPA 2022). There is one SWRCB open GeoTracker sites within 1/8 mile of the Project Area (Table 3.9-2). As listed in Table 3.9-2, 1811 G Street consists of a former fueling station site designated as an open Leaking Underground Storage Tank (LUST) case number T10000003375 with potential petroleum-impacted soil and groundwater (non-drinking water). The site is outside the Project Area and independent of soil disturbance associated with Project construction.

The off-site mitigation location at the City's Happy Valley property is associated with and adjacent to the former Simpson Timber, Mad River Industrial Complex listed on Geotracker as case number T062393593. The case was closed in 2004. Given the case is closed, any soil or groundwater interaction at the Happy Valley property needed to construct wetlands or plant sensitive natural communities would not result in any impact.

The Project is located along an industrial railroad corridor, which is known to include past use of heavy metals, creosote wood products, and other constituents associated with historical railroad activity and construction. Groundwater dewatering is generally not expected but may be required. Groundwater encountered during construction would be from shallow groundwater and not associated with a deeper aquifer. Therefore, Project construction activities may encounter residual concentrations of hydrocarbons, creosote wood products, other hazardous materials in the soil or groundwater. With implementation of Mitigation Measure HAZ-1, this potential impact would be reduced to a less-than-significant level.

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 Area is located approximately 4.5-miles south of the California Redwood Coast – Humboldt County Airport. The Project southern terminus is located approximately 5.2-miles north of the Murray Field Airport. The Arcata and Murray Field airports are covered by the 2021 Airport Land Use Compatibility Plan prepared for the Humboldt County Airport Land Use Commission. The Project Area is not located within either of the Airport Influence Areas, Review Area 1 and 2, established around the California Redwood Coast Humboldt County Airport and the Murray Field Airport (ESA 2021). Given the Project is not located within two miles of a public airport and is outside the Airport Influence Areas for both airports, no impact would result.

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

The area within the City limits is subject to the City of Arcata Emergency Operations Plan (EOP). The Project Area within unincorporated areas is covered under the Humboldt County EOP. The City of Arcata and Humboldt County EOPs identify the emergency response and evacuation policies and procedures for hazards related to earthquake, tsunami, extreme weather, flooding/flash flooding, landslides, transportation accidents, hazardous materials, interface wildlife fire, energy shortage, offshore toxic spill, civic disturbance, terrorist activities, and national security (City of Arcata 2021, County of Humboldt 2015).

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

Temporary lane closure to various public access roadways would be required during Project construction at the roadway crossings described in Section 1.5.3 (Construction Traffic and Access Control). Lane closures would safely demarcate and separate Project construction work along public roadways, at intersection, and along overpasses. Trail and trail access crossings would meet minimum traffic safety standards and may include rapid flashing beacon warning signs, new safety signage, crosswalks, raised crossing/speed tables, curb ramps, truncated domes, sidewalk improvements, fencing to channelize vehicle traffic, stairs, and ramps. Improvements will vary slightly by location to meet the site-specific design requirements for each crossing or access point summarized in Table 1.4.-1.

Lane closures would be in effect for a discrete portion of the overall Project construction, such as crossing locations described in Table 1.4-1 or portions of US 101 and 299 overpass bridges and would not be required during Project construction at other locations along the Project alignment. Signage, notifications, and timing for lane closure, as applicable, would be established in accordance with City of Arcata, County of Humboldt, and Caltrans requirements. Emergency response vehicles would not be impeded during lane closures.

The Project would not impair implementation or physically interfere with the established City of Arcata EOP, Humboldt County EOP, or Humboldt County HMP. Once constructed, operational use of the Project would not modify transportation along SR 299, US 101, or another public roadway. Thus, emergency response or evacuation via existing roadways would not change compared to existing conditions. As the Project would not impair implementation of an emergency response plan or evacuation plan, the potential impact related to the temporary closure of a single lane of US 101 during construction would be less than significant.

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

Wildland fire is addressed in Section 3.20 (Wildfire). As noted in Section 3.20, the Project would not expose people or structures to a significant risk from wildland fires, thus a less than significant impact would result. Please see Section 3.20 for further discussion of the Project as it relates to wildland fire risks.

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?		X		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			X	
i. result in substantial erosion or siltation on- or off-site;			X	
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			X	
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
iv. impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

The Project Area is in the Mad River and Janes Creek watersheds that contain a variety of creeks and tributaries that have been disturbed and rerouted due to developmental and land use. The Project Area crosses Janes Creek (Class I stream), South Fork Janes Creek (Class I stream), and Janes Creek Tributary (Class II stream), which are hydrologically connected to Humboldt Bay. Through the Aldergrove Industrial Area the North Fork of Janes Creek has been modified into an ad hoc ditch system. Near the Arcata Ridge Trailhead, Janes Creek crosses under the trail alignment via 4-foot diameter corrugated metal pipe arch culvert and South Fork Janes Creek crosses under the trail alignment via a 2-foot diameter corrugated metal pipe culvert. There are no tributaries present at the City's Happy Valley property, included in the Project for off-site wetland and sensitive natural communities purposes. The Project Area is near the Mad River and crosses multiple unnamed tributaries (Class III streams) to the Mad River. The Mad River is Clean Water Act section 303(d) listed for sedimentation/siltation, temperature, turbidity, and aluminum (NCRWQCB 2017). The Project is within Mad River and Janes Creek streamside management areas. A reconnaissance level wetland assessment was conducted for the Project and indicate potential wetlands are present along multiple segments of the Project Area (SHN 2022c).

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

The Project is required to obtain and comply with necessary Clean Water Act permits requirements from the Regional Board and USACE, to ensure the Project does not violate any water quality standards or waste discharge requirements.

Construction activities such as site clearing, grading, excavation, wetland creation, and material stockpiling, placement of aggregate base, and related construction activities could leave soils exposed to rain or surface water runoff that may carry soil contaminants (e.g., nutrients or other pollutants) into waterways adjacent to the site, degrade water quality, and potentially violate water quality standards for specific chemicals, dissolved oxygen, suspended sediment, or nutrients. The greatest potential Project impacts to water quality would result from sediment mobilization during construction, including construction near creeks and wetlands, replacement or modification of culverts, and the construction of bridges over gullies and drainage features. No in-water work would be required to construct the three bridges within the Project Area. If not properly managed, construction activities could result in erosion, as well the discharge of chemicals and materials. In such an instance, applicable water quality standards and waste discharge requirements could be violated, and polluted runoff could substantially degrade water quality in the local storm drain system. This impact is considered to be potentially significant.

However, as described in Section 1.7.1 (Environmental Protection Action 1), because the proposed Project is anticipated to disturb over one (1) acre of land, compliance with State Water Board Order No. 2009-0009 would be required which will regulate stormwater runoff from Project construction activities. Project operations will obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. In compliance with the National Pollutant Discharge Elimination System requirements, a Notice of Intent would be prepared and submitted to the North Coast Regional Water Quality Control Board prior to undertaking construction, providing notification and intent to comply with the State of California Construction General Permit (CGP). In addition, a SWPPP would be prepared for pollution prevention and control prior to initiating site construction activities.

The Construction SWPPP would be written by a Qualified SWPPP Developer would identify and specify requirements for erosion control, sediment control, off-site tracking control, wind erosion control, non-stormwater management control, and waste management and materials pollution control. A sampling and monitoring program would be included in the Construction SWPPP that meets the requirements of the CGP to ensure erosion control implementation is effective. A Qualified SWPPP Practitioner would oversee implementation of the Plan, including visual inspections, sampling and analysis, and overall compliance with the SWPPP and CGP. Additionally, any potential dewatering discharge would be pumped into Baker tanks (or similar), dewatering bags, or settling basins, or used for dust control purposes. Water sourced from dewatering would not be discharged to storm drains or sewer systems.

Implementation of Environmental Protection Action 1, combined with Mitigation Measure BIO-4, would reduce potential water quality impacts during Project construction activities to a less-than-significant level by requiring measures to control erosion and sedimentation of receiving water bodies. Mitigation Measure BIO-4 requires perimeter sediment control measures be installed near tributaries. Mitigation Measure BIO-4 also requires exclusion fencing tributaries. Under Mitigation Measure BIO-4, the location of exclusion fencing shall be included on the 100% design plan set for construction. Exclusionary fencing would prevent unintended entry of equipment or construction personnel into regulated waters, including juxtaposed wetlands, and development of erosion and sediment control plans to prevent inadvertent sediment delivery or impacts Waters of the U.S. and State. Implementation of Environmental Protection Action 1 and Mitigation Measure BIO-4 would reduce potential impacts on water quality standards and waste discharge requirements to a less-than-significant level by appropriately managing construction dewatering and implementing erosion control measures near streams and other Waters of the U.S. or State.

Following construction, operation and maintenance of the Project would not result in a new point discharge, a substantial increase in impervious surfaces relative to the surrounding area or significant discharges to the local storm drain system. The potential impact would be less than significant with the incorporation of Environmental Protection Action 1 and Mitigation Measure BIO-4.

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

The Project is located in the Mad River Valley Lowland Basin 1-008.01 (Humboldt County 2014), which is has a SGMA Basin Priority of Very Low and is not listed as Critically Overdrafted (Groundwater Exchange 2018). Contractor-supplied water would be used during construction for dust suppression on local roadways and work areas. Use of groundwater is not anticipated for construction of the Project, although some limited dewatering of excavations may be necessary. Similarly, the Project would not decrease groundwater supplies or interfere with groundwater management. During construction, isolated and short-duration groundwater dewatering may occur as needed. Dewatering would be small in scale and limited to shallow groundwater only. The construction-related impact on groundwater levels would not result.

Following construction, the Project would not utilize groundwater and would not result in an increase in population or employment that would indirectly increase groundwater demand. Therefore, the Project would not create a deficit in aquifer volume or a lowering of water levels. Additionally, the amount of impervious surface created by the Project is minimal when compared to the remaining adjacent undeveloped surfaces, thereby not affecting groundwater recharge. The Project is not expected to result in any change in the use or recharge of groundwater. No impact would result.

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

Due to some current drainage constraints in the Project Area, one of the Project goals is to ensure the Project has a neutral impact or benefit to existing localized drainage conditions. The Project would add approximately 5.3-acres of impervious surfaces to the Project Area through the construction of a Class I paved trail surface (10-feet wide), two paved parking areas, and associated sidewalks, ramps, and stairs. The trail is bordered by pervious surfaces except at existing road or driveway crossings. Because the narrow trail would be bordered by pervious surface, any new runoff resulting from the trail would quickly infiltrate, avoiding a risk of substantial erosion resulting from stormwater events. Multiple culverts cross through and direct stormwater within the Project Area. Minor alterations to lengthen existing culverts serving Class III streams would occur. Capacity of culverts would not change. Janes Creek culverts would not be modified. Construction of mitigatory wetlands at the Happy Valley property would not substantially alter the existing drainage of the site such that a significant impact related to on- or off-site siltation would result.

The railroad corridor is generally flat, and the trail design would avoid steep slopes or other design features that could contribute to slope instability, future erosion, and risk of siltation. The design would include stairs and ramps in discrete locations to provide access to the trail from existing roads and parks. A segment of the Project alignment within the County portion of West End Road to HBMWD's Essex Control Center (near the Park 1 trailhead) has cross slopes greater than 15% in some locations and 30-50% in some locations. Where required to maintain slope stability, the Project design would incorporate retaining walls or similar erosion control features to reduce the potential for slope instability, future erosion, and risk of siltation. A retaining wall would be constructed along a segment of trail near SR 299. Construction of Trail Alignment Scenario B (Figure 4) would also require a new retaining wall.

The portion of the Project located within the City of Arcata's jurisdiction is subject to the requirements of the State Water Quality Control Board's municipal separate storm sewer system (MS4) Permit. The MS4 Permit mandates local agencies to require development projects to comply with post-construction stormwater requirements based on "low impact development" (LID) standards. The Humboldt Low Impact Development Stormwater Manual (HLIDSM) provides a standardized approach for complying with the MS4 Permit's LID requirements for projects located in Humboldt County MS4 areas (North Coast Stormwater Coalition 2021). In order to comply with the HLIDSM, the trail would be designed to direct stormwater runoff to adjacent vegetated areas or other non-erodible permeable areas, away from creeks or towards the land-side of levees. As the design progressess, additional stormwater measures may be added in accordance with the HLIDSM and City of Arcata MS4 requirements.

The portion of the Project within the County of Humboldt jurisdiction is not in a MS4 area and not subject to the HLIDSM; however, it will need to comply with the CGP post construction stormwater performance standards. In order to be consistent with the portions of the Project located in the Arcata city limits and to comply with the CGP, runoff

from new impervious surfaces would be directed to adjacent vegetated areas or other non-erodible permeable areas, and away from waterways. LID measures, such as vegetated buffers and swales, would also be incorperated into the proposed parking lot design to reduce to capture and collect pollutants, to protect the water quality of receiving waters. As the design progressess, additional post-consruction stormwater measures may be added in accordance with the requirements of the CGP.

Erosion and sediment control would be implemented during construction to avoid impacts to water quality, including those related to siltation (see Hydrology and Water Quality Impact (a), above). The Project would be required to adhere to SWPPP conditions and requirements, as well as Clean Water Act Section 401 and 404 permits, including measures to prevent erosion-related impacts during construction. Substantial on- or off-site erosion and siltation would not result, and the potential construction-related impact with regard to erosion and siltation would be less than significant. The operational impact would also be less than significant.

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

A small portion of the Project Area is located in the FEMA 100-year flood zone; however, the trail alignment is outside of the flood zone (Figure 3). Within the Project Area, existing stormwater drainage systems along the railroad corridor are minimal and stormwater is generally captured and infiltrated within the railroad right of way and adjacent vegetated areas. Currently, the proposed trail alignment and the off-site Happy Valley property are generally surrounded by mostly pervious surfaces. Two areas within the Project Area currently experience drainage problems. A failing culvert, which crosses under the railroad tracks near Frank Martin Court, currently contributes to drainage problems; replacement of this culvert is not a part of this project. Under existing conditions, flooding also occurs during large storm events along the west side of West End Road, near the south of Aldergrove Road. The Project is not anticipated to have any impact on the drainage infrastructure associated with these existing issues.

The Project would add approximately 5.3-acres of impervious surface to the 3.5-mile Project Area. Potential localized impacts from the Project within the Project Area would be diminished based on the Project Area length, Project design, and the large amount of existing available natural drainage areas adjacent to the proposed trail alignment to support rapid infiltration. The trail design and associated stormwater improvements would direct runoff to new or improved drainage infrastructure (such as drainage inlets, storm drain piping, vegetated areas, or ditches) which would provide positive drainage across the new trail facilities. Drainage from the trail would sheet flow laterally toward the gravel shoulders (reducing the velocity), before it would sheet flow into the landscape or open space areas. The storm water would infiltrate into the landscaping or open space areas on the sides of the trail, which follows the existing drainage patterns toward the existing stormwater surface features. Additionally, the trail, including any new bridges, would not alter channel geometry, floodplain topography, or include other modifications that could change the existing flood setting of waterways within the Project Area. The potential impact to on- and off-site flooding resulting from a drainage pattern 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)

Within the Project Study Boundary existing stormwater drainage systems along the railroad corridor are minimal and stormwater is generally captured and infiltrated within the railroad right of way and adjacent vegetated areas. Implementation of off-site mitigation at the Happy Valley property would not result in any additional impervious surface and would not result in an additional source of polluted runoff.

– Sunset Avenue to Arcata Ridge Trail Head: The Project Area between Sunset Avenue and the Arcata Ridge Trailhead is mostly a vegetated area; bounded on the west by a mix of vegetated areas and residential development and bounded on the east by a large, vegetated buffer adjacent to US 101. Topography along the proposed trail alignment is generally flat and slopes downhill from Todd Court to the Arcata Ridge Trailhead. Stormwater generated in this area is collected in ditches adjacent to the railroad and infiltrated within the Project Area and adjacent vegetated areas.

– Arcata Ridge Trail Head to West End Road Crossing: The Project Area between Arcata Ridge Trailhead and the West End Road Crossing (near Wes Green Landscape Materials) is a mix of vegetated and highly impacted semi-pervious developed industrial areas and is bounded on the west by West End Road and industrial developments, and on the east by industrial developments. Topography along the proposed trail alignment is very flat. Stormwater generated in this area is generally collected in ditches adjacent to the railroad and infiltrated within the Project Area. Stormwater generated within the semi-pervious areas discharges outside of the Project Area by sheet flow to adjacent industrial properties and/or by concentrated flow via existing stormwater piping. Two areas within this Project Area segment currently experience drainage constraints.
    - Near Frank Martin Court there is a failing culvert under the railroad tracks. The Project would have a minimal impact on the drainage infrastructure associated with this issue. The replacement of this culvert is not included in this Project.
    - Additionally, the area to the west of West End Road, outside of the Project Area, near Aldergrove Road, floods during large storm events. The Project would have a neutral impact on the drainage infrastructure associated with this issue.
– West End Road Crossing to HBMWD Park 1: The Project Area from West End Road Crossing (near Wes Green Landscape Materials) to HBMWD Park 1 is located almost entirely in a vegetated area, and is bounded on the north by a large, vegetated buffer adjacent to SR 299 and the Mad River, and bounded on the south by a large, vegetated buffer adjacent to private residences and West End Road. Topography along the proposed trail alignment is generally flat, and slopes uphill from Wes Green to the Park 1 driveway entrance. A portion of the area along West End Road between the trail alignment and the Mad River contains slopes ranging from 15%-50%. Stormwater generally collects and infiltrates within the vegetated areas within the project study boundary. Multiple culverts and the HBMWD's tank overflow pipe cross under West End Road and the railroad corridor, supporting Class III unnamed tributaries to the Mad River.

The existing stormwater flow patterns generally retain water within the Project Area, with minimal stormwater discharge beyond the Project Area. Under existing conditions, with the exception of the failing culvert near Frank Martin Court, there are no signs of localized flooding within the Project Area. Thus, the existing storm water pathways would be retained in the trail's design. Following completion of construction, the drainage pattern would be similar to existing conditions.

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

Operationally, the Project does not include elements that would alter topography and rates of stormwater runoff. The Project would add approximately 5.3-acres of impervious Class I paved trail surface, two paved parking areas, and associated sidewalks, ramps, and stairs. Because the narrow trail would be bordered by pervious surfaces, new runoff resulting from the trail would quickly infiltrate, avoiding a risk of substantial erosion resulting from stormwater events. Stormwater associated with new paved parking areas, mainly in the Park 1 parking area, would be directed to adjacent vegetated areas. The trail would predominantly be used by non-motorized users, the exception being periodic use of light maintenance, police, and emergency service vehicles; thus, polluted runoff containing oil, gas, and other hazardous substances would not occur, consistent with existing conditions. The potential operational impact would be less than significant.

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

A small portion of the Project Area is located in the FEMA 100-year flood zone (Figure 3). However, the trail alignment is outside of the flood zone, no structures are proposed within the flood zone, and the Project design does not include any features that would impede or redirect flood flows, including off-site mitigation activities at the Happy Valley property. Existing topography, which is generally flat, would not be altered to create new steep drainages or slopes. The trail elevation would be similar to the existing ground surface and would not impede or redirect flood flows. The

trail would not impede or redirect flood flows in a manner different than existing conditions. Bridge construction across small gullies and drainages would not impede the existing flood hydrology. Proposed bridges would be located outside of the FEMA 100-year flood zone. Other Project design elements, such as safety and security fencing would also not impede or redirect flood flows. Any potential impact on the impediment or redirection of flood flows would be less than significant

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

The northern portion of the Project Area is adjacent to the Mad River, however not in the FEMA 100-year flood zone (Figure 3A). A small section of the Project Area, near the St. Louis Rd overpass and Janes Creek, is located in the FEMA 100-year flood zone (Figure 3B). The trail alignment would be constructed entirely out of the FEMA 100-year flood zone. No grading would occur in the FEMA 100-year flood zone. As portions of the Project Area overlap the FEMA 100-year flood zone, construction would not occur during flood conditions (see Section 1.5.2 – Construction Schedule). Thus, there would be no potential for a flood-related release of pollutants during construction. The Project does not include unsecured elements that could be washed away during a flood. Any potential construction related impact would be less than significant.

Operational maintenance of the trail would involve occasional repair, trash/debris removal, and vegetation maintenance (e.g., mowing), which could involve hazardous materials (e.g., small equipment fuel). However, these materials would not be stored within the Project Area and thus would not be released into the environment in the event of a flood event. Any potential operational related impact would be less than significant.

The Project Area is not located near a larger isolated body of water that may be affected by a seiche. The Project Area is not located within a tsunami hazard zone (City of Arcata 2020b). No impact from a seiche or tsunami would result.

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

The relevant water quality control plan is the NCRWQCB's Basin Plan which establishes thresholds for key water resource protection objectives for both surface waters and groundwater. The Project does not involve the use of groundwater resources and would not impact the quantity or quality of groundwater availability in the Mad River Valley Lowland Basin.

Per Environmental Protection Action 1 (see Section 1.7.1), the Project would be required to obtain coverage under SWRCB Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, which would include development and implementation of a SWPPP. The Project is also required to obtain and adhere to CWA Section 401 and CWA Section 404 permits (see Section 1.7.2 – Regulatory Approvals). Adherence to these regulatory requirements and associated requisite monitoring would ensure a conflict with the Basin Plan does not occur.

The City of Arcata General Plan contains guidelines for hydrology and water quality within the Resource Conservation and Management Element. The Project is consistent with Policy RC-7 Water Resources Management. The Project would meet the requirements of the City of Arcata Land Use Code sections on Grading, Erosion and Sediment Control (Policy 9.64) and Urban Runoff Pollution Control (Policy 9.66).

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

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?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

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

The Project would involve construction and operation of a multi-purpose Class I facility from Sunset Avenue to HBMWD Park 1 within the railroad right of way. The proposed improvements would not divide an existing neighborhood or community. Rather, the trail would enhance community connectivity by providing enhanced safety for all modes of transportation between Valley West, West End Road, Aldergrove Industrial Park, downtown Arcata, Humboldt State University, and HBMWD Park 1. Fencing currently exists in multiple locations in the Project Area, including along some industrial properties on West End Road and St Louis Road, US 101, and some parks. Generally, fencing is set back from the proposed trail alignment and is only on one side of the railroad corridor. Most of the existing fencing is wire, chain-link, or other visually permeable material, approximately three to six feet tall. Additional fencing would be constructed in some industrial portions of the project near road and driveway crossings to increase pedestrian safety from vehicles and in some residential areas to provide privacy screening. Fencing would not be continuous throughout the entire trail length, allowing people and wildlife to cross the Project Area. Gaps in fencing would exist along driveways, road crossings, and most other areas currently without fencing. Thus, the required fence would not inadvertently divide the community. An objective of the Project is to provide safe pedestrian and bicycle pathways to connect communities throughout the Project Area; existing and new fencing would not conflict with that objective. No impact would result.

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

The proposed Project would be located within the existing railroad right of way and would include intersections with existing City street or private driveway crossings. The Project Area is not located within the Coastal Zone. The majority of the Project is within the City of Arcata city limits, and a northern portion of the project is within the Arcata Community Planning Area of Humboldt County jurisdiction.

City Plans, Policies, and Regulations

Within the City of Arcata, the railroad corridor is not zoned. Properties adjacent to the corridor have the following designated zoning and land uses: Industrial General, Industrial Limited, Residential Very Low Density, Residential Low Density, Residential Medium, and Public Facility. The Project does not conflict with the City General Plan and is specifically supported by policies in the Transportation (T) Element and Open Space (OS) Element, as noted below. The Project is also consistent with the Noise Element (please see Section 3.13 – Noise for associated impact analysis based on the General Plan Noise Element) and Resource Conservation Element (please see Section 3.4 – Biological Resources for associated impact analysis). The Project is consistent with the following relevant City General Plan Policies:

T-1a Investment in alternative modes

In order to provide a realistic and cost-effective balance between travel modes, the City shall emphasize investment in alternative modes (bikeways, etc.) as a priority over increasing vehicular capacities of streets.

T-1c Intercity travel

The City shall coordinate with Humboldt County and Caltrans to provide adequate facilities for vehicles, buses, and bicycles to serve intercity demand. Joint efforts may include transportation improvements outside of Arcata which serve intercity travel, such as bicycle links, timed-transfer bus stops, park-and-ride lots, and regional transit service and development of park-and-ride lots in Arcata to reduce intercity vehicular travel.

T-5b Class I bikeways.

Class I bikeways are within completely separated right of way for exclusive use of non-motorized modes. They generally serve corridors not served by streets and provide a recreational opportunity or a high-speed commuter route. Class I bikeways can be multi-use trails serving bicyclists, pedestrians, rollerbladers, and equestrians. A Class I bikeway shall be included on the proposed Sunset-Foster arterial. The following standards shall apply to development of Class I bikeways:

1. Bikeway continuity. Off-street bikeways do not need to be continuous but need to connect to other types of facilities at each end of the bikeway to provide an interconnected system.

2. Right of way opportunities. As opportunities arise, the City shall utilize existing or acquire new easements or right of way for Class I bikeways. Such opportunities may include connecting dead-end streets in new developments with existing neighborhoods, along streets with excess width and unpaved right of way, along drainage channels or creeks, or along abandoned railroad rights of way.

3. Design standards. Two-way Class I bikeways shall be constructed with a minimum width of eight feet and a preferred width of ten feet (five feet for one-way travel). Caltrans design standards shall be used for other design elements such as drainage slope, clearance, signing and striping, and control where bikeways intersect streets.

T-5g Pedestrian pathways and multi-use trails

Pedestrian pathways or multi-use trails for the exclusive use of non-motorized transportation modes should be provided. Pathways may be long facilities located along corridors or short facilities providing direct access through development projects or connecting areas not directly accessible by streets. Pathways should be planned to serve both recreational and commuter needs. The following shall apply to pedestrian pathways or multi-use trails:

1. Easement dedication. Dedication of easements for pathways through new private developments may be required.

2. Cooperation with local and regional agencies and jurisdictions. The City shall cooperate with other agencies to establish and maintain off-street pathways and trails utilizing creek, utility, and railroad right of way.

3. Foster Avenue Extension. Multi-use paths or trails shall be included in the Foster Avenue extension to Sunset Avenue.

4. Other Locations. Other potential locations for multi-use paths are within the North Coast Railroad right of way from Giuntoli Lane to Samoa Boulevard, along the west side of Samoa Boulevard/Old Arcata Road east of State Route 101, and along the perimeter of Arcata Bay towards Manila.

T-7a Retention of railroad right of way

The North Coast Railroad Authority is encouraged to maintain railroad rights-of-way even if service is abandoned. The City may consider purchase of right of way should the Authority decide to sell. Railroad right of way may potentially be used for creation of multi-use trails. Long range potential uses of railroad right of way include an exclusive bus transitway or passenger rail service.

T-7d Rails to trails conversions

The City supports plans to convert abandoned railroad rights-of-way to provide multi-use trails. Planning efforts shall be coordinated with federal, state, and regional agencies to obtain funds to purchase or lease abandoned lines if the railroad authority selects not to dedicate the right of way. If feasible, active railroad lines may be used for multi-use trail purposes.

OS-1d Linkages between open space areas

Linkage of open space lands, especially along biological corridors and greenways is important for animal migration, nonmotorized vehicle transportation, and community recreation, and shall be encouraged. Trails along levees or adjacent to railroad tracks and street rights-of way can serve as links to parks, open space, and natural areas. Easements shall also be considered as a lower cost alternative to preserving links between open space.

The Project is also consistent with other City planning documents, including:

- West End Specific Plan (City of Arcata 2018) - This plan is based on market study focused on Happy Valley Industrial Park and Aldergrove Industrial Business Condo projects. The plan describes the need for pedestrian and bicycle network improvements and notes that the Annie & Mary Trail Connectivity project will help provide alternative transportation routes.
- Arcata Pedestrian and Bicycle Master Plan (City of Arcata 2010a) - This plan identifies projects to improve accessibility for pedestrians and bicyclists throughout Arcata, including identifying the Annie & Mary Trail as an important commuter, transportation, and recreation opportunity.
- Arcata Parks and Recreation Master Plan (City of Arcata 2010b) - This plan notes that desires for recreational trails is increasing locally and nationally. Developing trail systems, such as the Annie & Mary Trail, that connect parks, natural areas, businesses, commercial, and residential sections of town can help to support the health and wellness of communities and surrounding environment.

County Plans, Policies, and Regulations

The Project Area is designated as Limited Industrial and Agricultural Grazing zoning and designated Industrial General, Public Facility, and Residential Estates land uses in the County's General Plan, all of which allow public access and/or recreational uses. The Project does not change existing or future land use designation, does not conflict with the County General Plan, and is specifically support by policies in the Circulation (C) Element, as noted below. The Project is also consistent with the County's Noise Element (please see Section 3.13 – Noise). The Project is consistent with the following relevant County General Plan Policies:

C-P38. Develop a Regional Trails System

Support efforts to establish and connect regional trails, particularly in the greater Humboldt Bay and lower Mad River areas, the Eel River Valley, along the Avenue of the Giants and in the Klamath-Trinity area. The System should include the California Coastal Trail system and consist of multi-use trails where feasible.

C-P14. Rail Rights-of-Way

All contiguous rail rights-of-way currently held by the North Coast Railroad Authority, and those along the former Annie and Mary Railroad rail corridor between Arcata and Blue Lake, shall be planned Railroad in the Land Use Element.

C-IM16. Mapping of Rail Rights-of-Way as Railroad

All contiguous rail rights-of-way currently held by the North Coast Railroad Authority, and those along the former Annie and Mary Railroad rail corridor between Arcata and Blue Lake, shall be designated Railroad in the Land Use Element and shown as a line symbol on the land use maps. A combining zone shall be applied to these

properties to protect the rail rights-of-way from development that may interfere with the use of the rights-of-way for transportation purposes.

Applicable policies adopted for the purpose of avoiding or mitigating environmental effects can be found throughout the City of Arcata and Humboldt County General Plans. A review of the City and County General Plan elements, and the policies and standards within, did not identify any inconsistencies with the proposed Project. Therefore, the Project would be consistent with all applicable land use plans and policies and no impact would result.

The Project is also consistent with other County and regional planning documents, including:

- Humboldt Regional Bicycle Plan Update (HCAOG 2018) - This plan identifies bikeway system projects that could help make bicycling throughout Humboldt County a safe, convenient, and practical means of transportation. The Annie & Mary Trail is listed as a priority project.
- Regional Transportation Plan for Humboldt County (VROOM - Variety in Rural Options of Mobility) (HCAOG 2017) - The Annie & Mary Trail is noted as a commuter trail element that could connect the Arcata Trail with the Humboldt Bay Trail, helping to complete an important regional trail system.
- Humboldt County Regional Trails Master Plan (HCAOG 2010) - This plan identifies the Annie & Mary Trail as an important segment of the regional trail system to help connect multiple jurisdictions throughout the County.
- Humboldt County Regional Pedestrian Plan (HCAOG 2008) - This plan guides the planning of County pedestrian infrastructure. The Annie & Mary rail corridor is listed as a location for consideration for future trail construction.

Specific policies and regulations adopted for the purpose of avoiding or mitigating environmental effects are evaluated in this document under the corresponding issue areas. For example, an evaluation of the Project in relation to biological resources is provided in Section 3.4 Biological Resources. Evaluation of wildfire risk and emergency evacuations in relation to the Arcata Emergency Operations Plan and Humboldt County Emergency Operations Plan is provided in Section 3.9 (Hazards and Hazardous Materials), and Section 3.20 (Wildfire).

Agencies that regulate the filling of wetlands and waters include the USACE and the Regional Board. Since the proposed Project would affect USACE and Regional Board jurisdictional wetlands, the City would obtain the necessary permits to comply with respective regulations under Clean Water Act Section 404 and Section 401. The City would obtain permits from CDFW for any impacts to the tributaries associated with culvert modifications and bridge installation, regulated SNCs, or special status plants in the Project Area, consistent with Section 1602 Streambed Alteration Agreement permitting requirements.

By implementing permit requirements and mitigation measures identified in Section 3.4 (Biological Resources) and Section 3.10 (Hydrology and Water Quality) above, the Project would not conflict with any applicable federal and State environmental regulations. Additionally, the proposed trail would not permanently alter the existing land uses, their designations, or their zoning, and would not introduce new land uses or land use designations or zoning; therefore, no conflict with applicable land use plans, policies, or regulation(s) would occur. No impact would result.

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?			X	
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X	

a, b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (Less than Significant Impact)

The Project would require minor use of rock, gravel, sand, and other similar materials, but is not expected to have any significant impact on locally available minerals or mineral resources valuable to the region or the State. Additionally, the Project Area is also not designated by the City of Arcata General Plan, Humboldt County General Plan, or other local land use plan as having locally important mineral resources within the Project Area (Humboldt County 2017, 2022). The impact would be less than significant.

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?			X	
b) Result in generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

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

Current noise conditions within and near the Project Area consist of substantial ambient noise from freeway traffic along US 101 and SR 299, as well as local traffic along West End Road and other surface streets. As noted in the Arcata General Plan Noise Element, the projected noise contours for US 101, SR 299, and West End Road alignments range from 55 to 65 decibels (dB). The majority of the Project Area, specifically those portions which parallel the US 101, SR 299, and West End Road corridors, are located within the 65 dB noise contour.

Industrial, commercial, and residential land uses are distributed along the entire length the Project Area. Potential sensitive receptors located in proximity to the Project Area include schools, medical facilities, and senior living facilities, as described in Section 3.2 (Air Quality, Table 3.3-2) and 3.9 (Hazards and Hazardous Materials, Table 3.9-1). Construction near sensitive receptors, including residences and childcare centers in close proximity to the trail, would result in short-term increases during construction-related noise. Nighttime construction would not occur.

Construction of the Project would result in a temporary noise increase associated with the use of construction equipment for the Project for approximately 245 working days, of which only a subset would involve construction within either the County or City jurisdiction. As the Project is linear in nature, the noise associated with construction activities would move along the alignment as work is conducted, resulting in intermittent increases at each of the adjacent sensitive receptors during the construction phase that would shift as construction progresses. Construction in any one area is not expected to exceed 40 days. Construction activities would be limited to daytime work hours between 7:00 a.m. to 7:00 p.m., Monday through Friday with occasional work on Saturdays.

The proposed Project is located within the jurisdiction of the City of Arcata General Plan and the Humboldt County General Plan. Therefore, the noise policies from both the City and Humboldt County General Plans are applied in this Section.

– As part of the Arcata General Plan Noise Element, the City of Arcata has adopted Policy N-5d (Construction site tool or equipment noise), which limits the operation of tools and equipment used in construction to between the hours of 8:00 AM and 7:00 PM (Monday through Friday), between 9:00 AM and 7:00 PM on Saturdays, and prohibits noise from heavy construction equipment on Sundays. As the Project construction phase would be

temporary, construction activities would be intermittent and limited to between 7:00 a.m. and 7:00 p.m., and construction within the City of Arcata would comply with Noise Policy N-5d. Thus, the Project would not conflict with City General Plan Policy N-5d.

Humboldt County has not established construction-related noise standards. Thus, construction of the Project will not conflict with a County noise standard.

Operation

The City's Noise Element considers transportation noise sources and levels under Policy N-3b. Because the trail is a non-motorized transportation facility, new noise levels would be much lower than a new roadway and therefore below the maximum allowable transportation noise source exposure levels included in Table N-2 of the City's Noise Element.

The Humboldt County General Plan includes Standard N-S1, which specifies that the Land Use/Noise Compatibility Standards (Table 3.13-2 below) shall be used as a guide to ensure compatibility of land uses. Development may occur in areas identified as "normally unacceptable" if mitigation measures can reduce indoor noise levels to "Maximum Interior Noise Levels" and outdoor noise levels to the maximum "normally acceptable" value for the given land use category.

For measuring noise levels and setting noise standards, the County uses Community Noise Equivalent Level (CNEL) units (Humboldt County 2017). CNEL is a measure that describes the average noise exposure over a period of time. The General Plan stipulates that 60 CNEL is the upper acceptable limit for residential units (outside measurement), and 85 CNEL is the upper acceptable limit for public right-of-way land uses.

Once the Project is constructed, recreational users would not generate a significant amount of noise in excess of County CNEL standards. Noise associated with the operation of the trail would generally consist of typical human speech, sporadic dog barks, and use of non-motorized modes of transportation including bicycles, scooters, and skateboards. The use of motors, pumps, or other mechanical appurtenance capable of creating a stationary noise source would not occur. Therefore, Project operation would not result in noise levels exceeding the County's noise standards for residential units, playground or neighborhood parks, or public right of way land uses and would not generate 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.

Operational noise would be consistent with both City and County standards. A less than significant impact would result.

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

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

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

Table 3.13-1 presents typical vibration levels that could be expected from construction equipment at a distance of 25-feet (Caltrans 2020b). High-power or vibratory tools and rolling stock equipment (e.g., tracked vehicles, compactors), may generate substantial vibration in the immediate vicinity. Vibratory rollers typically generate vibration levels of

0.210-inch/second PPV at a distance of 25-feet. Vibration levels are highest close to the source and attenuate with increasing distance. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

Table 3.13-1 Typical vibration levels for construction equipment used during Project construction (Caltrans 2020b).

Equipment	Reference PPV at 25 ft. (in/sec)
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003
Crack-and-seat operations (specific pavement rehabilitation process)	2.4

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

Vibration impacts to residences are anticipated to be minor as the closest residences are generally located greater than 25-feet away from the Project Area and often at a higher grade than the trail surface. As shown in Table 3.13-3, a residence at a distance of approximately 25-feet away from a vibratory roller would be exposed to vibration levels up to 0.21 inches/second PPV, which is substantially less than the applicable 0.5-inch/second PPV limit for modern construction. Minor vibration adjacent to mechanized equipment and road/trail treatments during construction work would be generated only on a short-term basis. Therefore, groundborne vibration and noise would have a less than significant impact.

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

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

The Project Area is located approximately 4.5-miles south of the California Redwood Coast – Humboldt County Airport and the Project southern terminus is located approximately 5.2-miles north of the Murray Field Airport, as described in Section 3.9 (Hazards and Hazardous Materials) Impact (d). The Project is not located within an airport land use plan. Therefore, the Project would not expose people residing or working in the Project Area to excessive noise levels. No impact would result.

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)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

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

The Project would not be growth-inducing and would not result in the need for construction of new homes or businesses directly or indirectly. No new roads, extension of water or sewer utilities, or other infrastructure would be installed or constructed that would indirectly allow for additional residential units or commercial uses to be constructed. Further, the Project does not include any residential units or other development that would directly induce population growth. The Project is intended to serve the existing community and future regional usage of the Great Redwood Trail but is not considered growth inducing. Given the modest level of construction required for the Project, it is reasonable to anticipate that workforce requirements for construction can be met through the local labor force within the region. Maintenance of the proposed trail would be performed by existing City and County staff. Due to these reasons, the Project would not induce population growth directly or indirectly, and no impact would result.

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

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

3.15 Public Services

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

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? (Less than Significant Impact)

As a non-motorized transportation facility, the Project would not necessitate any related new or altered public service facilities. The Project would solely be used for recreational and non-motorized transportation purposes. Given the nature of the proposed pathway, the Project would not result in a significant adverse effect on the service rations for the California Highway Patrol (CHP), County sheriff, City police, or fire departments. However, the Project would facilitate an increase in bicycle, foot, and other non-motorized travel in the vicinity. The trail would be included as a public area monitored by Arcata Police Department within the City limits and by Humboldt County Sheriff's Office deputies on unincorporated portions of the trail. The Project is not expected to substantially increase the need for patrols by local law enforcement or emergency services. The Project may ultimately have the beneficial effect of reducing the need for patrol by encouraging more public use and discouraging unwanted activity in the area. As discussed in Section 3.14 (Population and Housing), implementation of the Project would not directly or indirectly induce population growth and, therefore, would not require expanded fire or police protection facilities to maintain acceptable service ratios, response times, or other performance objectives. The potential impact related to fire and law enforcement would be less than significant.

The Project would not result in an increase in student population, and therefore, no new or expanded schools would be required. As the Project would provide an additional recreational opportunity in the community and would not increase the population, it is anticipated that there would be sufficient service ratios with regard to parks. Operationally maintenance of the trail is within the City's existing capacity. The existing Arcata Ridge Trail parking area would be enhanced, benefiting the existing access point to the Arcata Community Forest. A new parking area would be created at the northern portion of the Project. A new parklet (small park) is proposed to be constructed adjacent to the trail under the St. Louis Road bridge. The trail will provide safer access to multiple public parks and increase connectivity to other community trails. These project elements would benefit recreation and public access throughout the City and portion of the County. No impacts to other City of County parks would result. Overall, impact related to public services would be less than significant.

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?			X	
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

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? (Less than Significant Impact)

The Project proposes a new recreational amenity within the City of Arcata and an unincorporated area of Humboldt County. The proposed trail would increase non-motorized transportation in the area making it convenient and safer for users to travel throughout the City and provide additional recreational opportunities for trail visitors. A new parklet under the St. Louis underpass is included in the Project. The Project Area is near multiple public parks and trails. The trail would provide access to Humboldt Bay Trail North, Larson Park, Arcata Skate Park, Arcata Ridge Trail and Arcata Community Forest, and HBMWD Park 1. It is within a half mile of Shay Park, Janes Creek Meadows Trail and Meadows Park, Aldergrove Marsh, and Carlson Park. The proposed Project could result in more people in the Project Area utilizing local and regional parks and other recreational facilities. Given the number of existing park and recreational options available in the Project Area, the Project would not increase use of a park such that substantial physical deterioration would result. The additional use is within the current capacity of each park.

The proposed trail is a recreational facility that could encourage the construction of other reasonably foreseeable recreational facilities, predominantly other connecting trails or related amenities. Such future projects would be subject to CEQA review and other environmental approvals, as applicable, once proposed, and are considered under cumulative effects in Section 3.21 – Mandatory Findings. The potential impact would remain less than significant.

b) Include or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (Less than Significant Impact)

The Project would create a recreational facility where there was none prior (i.e., within the specified Project Area). The potential environmental impacts associated with construction of the proposed recreational facilities are evaluated as part of this Initial Study. As discussed above, the proposed trail would be a recreational facility that could encourage the construction of other recreational facilities, predominantly other connecting trails or related amenities. Future connecting and related trail and recreational facility projects would be subject to CEQA review and other environmental approvals, as applicable, once proposed. A less than significant impact would result.

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, roadways, bicycle and pedestrian facilities?				X
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?		X		

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (No Impact)

The Project would construct a trail along an unused railroad corridor to close gaps in walking and biking connectivity for neighborhoods within north Arcata, which would enhance the ability of the residents and visitors of Arcata to enjoy, recreate, and do business in a safe and family-friendly manner. Construction would result in vehicle trips by construction workers and haul-truck trips for material off-haul and deliveries via SR 299 from the north and US 101 from the south and along West End Road and Sunset Avenue. Construction-related traffic would be temporary, would vary on a daily basis, and would be distributed over the course of a workday and work week. The number of construction-related vehicles traveling to and from the Project Area would vary on a daily basis.

In accordance with Caltrans and City of Arcata requirements, the construction contractor would be required to obtain an encroachment permit for work completed within each agency's jurisdiction and/or right of way boundaries. The construction contractor's encroachment permit application would include a proposed temporary traffic control plan, and if necessary, would include plans for re-routing of vehicles, bicycles, and pedestrians. Traffic controls would be required in accordance with the City, County, and Caltrans standards, and contractors would be required to comply with the general conditions of the encroachment permit. Therefore, through compliance with local requirements, construction activities would not result in substantial adverse effects or conflicts with the local roadway system. The temporary construction impact on the circulation system would be less than significant.

Once complete, the proposed Project is not expected to significantly increase vehicle traffic on local streets and would not increase the area's population or redirect traffic patterns. Vehicle traffic may increase slightly to the Project's improved or newly established trailheads; however, the design is intended to provide convenient pedestrian or bicycle access at multiple locations throughout the 3.5-mile trail, potentially decreasing the distance trail users have to travel to access the trail and reducing reliance on vehicles to get there. The Project would support increased non-motorized travel to and from the area by trail users. The Project would incorporate pedestrian traffic safety measures, such as stop and yield signs on both the trail and roadway and would not conflict with effective circulation system performance or intersection level of service standards. The proposed trail would reduce the number of vehicular intersections and provide a route alternative for pedestrian and bicycle users may currently traverse between Sunset Avenue and Valley West/Aldergrove Industrial Area. Additionally, by providing a safe and convenient trail for alternative modes of transportation, the Project could reduce the number of vehicle trips taken by residents and visitors, effectively reducing vehicular traffic and circulation in the area.

The Project is consistent with multiple plans and policies addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities further described in Section 3.11 (Land Use and Planning). The following plans all identify the Annie & Mary Trail, inclusive of the Project Area, as a priority project or a project that would help to

improve regional accessibility for pedestrians and bicyclists: The Humboldt Regional Bicycle Plan Update (HCAOG 2018), West End Specific Plan (City of Arcata 2018), Regional Transportation Plan for Humboldt County (HCAOG 2017), Arcata Pedestrian and Bicycle Master Plan (City of Arcata 2010a), Arcata Parks and Recreation Master Plan (City of Arcata 2010b), Humboldt County Regional Trails Master Plan (HCAOG 2010), and Humboldt County Regional Pedestrian Plan (HCAOG 2008). The Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. Therefore, no impact would result.

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

Pursuant to SB 743 and the current CEQA Guidelines, evaluation of a project's potential transportation impact requires consideration of vehicle miles traveled (VMT), which refers to the amount and distance of automobile travel attributable to a project. Section 15064.3, subdivision (b), of the CEQA Guidelines lists the criteria for analyzing transportation impacts from proposed projects. The criteria are broken into four categories, including land use projects, transportation projects, qualitative analysis, and methodology. Transportation projects that reduce, or have no impact on, VMT 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.

Examples of projects that result in the potential to increase VMT include:

– Changes in land use
– Expanded roadways (e.g., new roads, additional lanes)
– Private development
– Expanded public service facilities, such as new police stations, new fire stations, or new administrative buildings
– Residential development, such as a new sub-division

The proposed Project includes none of the above listed elements and does not include any component that could be characterized as resulting in a potential increase to VMT. To the contrary, the Project will promote non-motorized transportation. By its very nature, the Project is VMT-reducing. Per the California Office of Planning and Research's guidelines for evaluating transportation impacts in CEQA, for roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements (OPR 2019). By promoting multi-modal transportation, the Project will reduce VMT throughout the Project Area and would thus not result in an environmental impact under CEQA. Instead, the Project would result in an environmental benefit by reducing the existing VMT within the City of Arcata and a small portion of the County.

PRC 21099 (b) (1), upon which the CEQA VMT guidance is based, specifically states the purpose of the VMT criteria is to promote, "the development of multimodal transportation networks," consistent with the fundamental goals and objectives of the Project related to promoting non-motorized transit, as stated in Section 1.2 (Purpose and Need). Similarly, the OPR guidance notes the overall purpose of updating CEQA to include VMT analysis is to help achieve California's long-term criteria pollution and greenhouse gas emission goals, based on four strategies that include, "plan and build communities to reduce vehicular greenhouse gas emissions and provide more transportation options (OPR 2019)," which is also directly supported by the Project's goals and objectives related to non-motorized transportation.

Other applicable considerations in the OPR guidance note the criteria for determining the significance to transportation impacts must promote the development of multimodal transportation networks. The core goal and objectives of the Project promote the development of multimodal transportation networks by upgrading and extending the walkway and sidewalks, along with upgraded intersection safety, throughout the Project Area.

The proposed Project would not increase the length of roadway, add new roadways, or increase the number of travel lanes. Any increase in VMT related to trailhead development and vehicular use would be *de minimis* and balanced by

the Project's VMT reducing measures to promote non-motorized transit. By promoting non-motorized transportation, the Project would reduce VMT through the Project Area.

Thus, the Project is consistent and entirely on par with the expectations of the OPR guidance for evaluating transportation impacts in CEQA. Lastly, the OPR guidance clarifies that when evaluating impacts to multimodal transportation networks, lead agencies generally should not treat the addition of new transit users as an adverse impact. Therefore, any success the Project ultimately achieves to increasing multi-modal transit (e.g., additional pedestrians and bicyclists using the Arcata Annie & Mary Trail and adjacent trailheads and sidewalks) should not be considered an environmental impact under CEQA. 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)? (Less than Significant Impact)

The Project would not change the geometry of the street or roadway network. Widening of the overpasses to accommodate the trail would be required to meet Caltrans design standards, which prohibit geometric changes that could result in a safety hazard. Therefore, no potentially hazardous roadway design features would be introduced by the Project. The trail would be routed adjacent to City and County roads. Where the rail corridor currently crosses roads, new or improved crossings would be constructed. Improved roadway crossings would be constructed at Sunset Avenue and new roadway crossings would be constructed at Giuntoli Lane, Aldergrove Road, West End Road, Todd Court, multiple private and business driveways (Figure 2). Trail crossings would be ADA-accessible and would meet minimum traffic safety standards. Crossing improvements may include rapid flashing beacon warning signs, new safety signage, warning signage and markings on the trail, crosswalks, raised crossing/speed tables, curb ramps, truncated domes, sidewalk improvements, and fencing to channelize vehicle traffic at driveways. In addition, directional/wayfinding signage would be installed at regular intervals to inform trail users of nearby connections to surface streets and nearby destinations. Improvements would vary slightly by location to meet the site-specific design requirements for each crossing and would ultimately reduce potential impacts associated with hazards due to geometric design feature to a less than significant level.

Modifications to enhance pedestrian and bicycle safety and access would be constructed on the Sunset Avenue bridge over US 101 and Giuntoli Lane bridge over SR 299. SR 299 Overpass enhancements would include demolition, grinding, structure widening and associated support columns and footings, sidewalk enhancements, striping, railing enhancements, and/or barrier enhancements. US 101 Overpass enhancements would include grinding and restriping. Both structures are Caltrans facilities; any alterations to either overpass requires consistency with Caltrans design standards and processes. Project design compliance with the Caltrans *Highway Design Manual, 7th Edition* (Caltrans 2020a), *California Building Code* (CBSC 2019), and *California Manual on Uniform Traffic Control Devices* (Caltrans 2021a) would reduce the potential impact of hazards associated with geometric design features to a less than significant level.

The proposed trail may have potential conflicts between users who are stationary (such as birdwatchers) and bicyclists due to the difference in these activities or between equestrians and other trail users due to necessary space requirements. However, since the proposed trial would have striping, signage, and unpaved shoulders on both sides which could be used by birdwatchers, equestrians, and other uses who want to get out of the main travel lanes, substantial safety related conflicts between trail users, stationary individuals, and equestrians would be avoided. The trail shoulder has been widened where greater equestrian use would be anticipated to reduce conflicts between equestrians and other trail users.

Based on the information above, the proposed Project would not substantially increase hazards due to a design feature; therefore, the impact is less than significant.

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

The proposed trail would be adjacent to existing streets and multiple new public access points to the trail via sidewalks, ramps and stairs. Emergency access to the Project Area already exists from public streets or private driveways and would continue to exist under the proposed Project during both construction and operation. Potential access points are located at least every 0.25-mile. To support SR 299 overpass widening, long-term lane closures

would occur. Lane and/or roadway 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-1. Since the trail corridor is already served by emergency and law enforcement personnel, the trail would not slow or hinder emergency response, would not require additional emergency services, and would maintain emergency access to all trail segments; therefore, a less than significant impact would result during construction. Following construction, all properties along the Project alignment would continue to have emergency access. The trail would also be accessible to emergency responders. Mitigation Measure TR-1 has been incorporated into the Project to reduce the potential impact to emergency access to a less than significant level.

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 to notify 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, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				X
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe				X

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

The City provided AB 52 notification letters to representatives of the Blue Lake Rancheria, Bear River Rancheria, and Wiyot Tribe on February 15, 2022. The Blue Lake Rancheria responded on February 24, 2022 and noted the potential for encountering culturally sensitive resources and requested consultation. The Bear River Rancheria responded on March 7, 2022 and requested cultural monitoring within 600-feet of culturally sensitive areas near and within the Project Area. The Wiyot Tribe did not respond but was included on correspondence sent to the City from the Blue Lake and Bear River Rancherias.

City representatives and DZC met with the Blue Lake Rancheria Tribal Historic Preservation Officer at the Project Area on August 8, 2022. No cultural sites were not located during this site visit. The Blue Lake Rancheria Tribal Historic Preservation Officer requested protocols for any inadvertent archaeological discovery as a condition for the project during the construction phase. Mitigation Measure CR-1 and CR-2 have been included in the Project and include protocols for inadvertent discovery (see Section 3.5 – Cultural Resources). Since no cultural sites were identified or located during the site visit and no additional information was provided to locate the site, the Blue Lake Rancheria Tribal Historic Preservation Officer, in consultation with Cultural Director Ted Hernandez, concluded that no cultural monitor would be needed during construction. As cultural sensitive areas remain unlocatable, cultural and/or archaeology monitoring within proximity to these resources would not occur.

The Cultural Resources Investigation prepared for the Project has been shared with the three tribes. AB 52 consultation concluded on August 23, 2022. As tribal cultural resources were not specifically identified as a result of the AB 52 consultation process, no impact would result.

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?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

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

The Project would not alter wastewater characteristics or result in an increase in the generation of wastewater. The Project would not result in an increased demand for water, natural gas, or telecommunications facilities. Similarly, the Project does not include any restroom facilities and would not result in an increase in generation of wastewater. Therefore, the Project would not require or result in the construction of other water, wastewater treatment, natural gas, or telecommunications facilities or expansion of existing facilities. A portion of the Project, from West End Road near HWY 101 Overpass to Wes Green, is located adjacent to the HBMWD's easement and waterlines; the Project would not result in relocation of those utilities.

The Project would utilize electricity for the proposed trail lighting (refer to Section 1.4.1 Project Elements). Electrical utility extensions would be required to support streetlights in key locations along the trail within Arcata City limits; however, they would be constructed in areas already serviced by electrical infrastructure. New lighting would tie into existing light pole boxes or transformers near the proposed trail alignment. Electrical connections would be constructed and maintained in accordance with all rules and regulations; therefore, installation of electrical connections would not cause significant environmental effects. Solar would be used where feasible, such as to support new rapid flashing beacon warning sign at crossings, reducing the need for additional electrical infrastructure.

The trail design and associated stormwater improvements would direct runoff to new or improved drainage infrastructure (such as drainage inlets, storm drain piping, vegetated infiltration areas, or ditches), which would provide positive drainage across the new trail facilities. Drainage from the trail would sheet flow laterally toward the gravel shoulders (reducing the velocity) before it would sheet flow into the landscape or open space areas. The storm water

would infiltrate into the landscaping or open space areas on the sides of the trail, which follows the existing drainage patterns toward the existing stormwater surface features. Multiple culverts cross through and direct stormwater within the Project Area. Minor alterations (e.g., extensions) to existing culverts serving Class III streams would occur to expand the stormwater structure through the trail, including the existing culverts in the County portion of West End Road. Capacity of modified culverts would not change. Two existing corrugated metal pipe culverts that serve Janes Creek and South Fork Janes Creek near the Arcata Ridge Trail cross under the railroad right of way. Neither culvert would be relocated or modified. Modifications to culverts would have a neutral or beneficial impact to drainage and flooding in the Project Area. The amount of impervious surface area created by this project is not anticipated to significantly increase surface water discharge volumes.

Overall, the Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, natural gas, or telecommunications facilities. The Project would be designed to maintain existing drainage patterns and connect to existing electrical power sources, which would not cause significant environmental effects. The potential impact to on- and off-site utilities and services resulting from the Project would be less than significant.

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

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

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

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

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

The solid waste providers in the area are Recology Arcata (Recology) and the Humboldt Waste Management Authority (HWMA). The Project is not expected to generate a significant increase of services for solid waste disposal needs. The proposed trail would generate limited solid waste during construction and even less waste during operation. Construction solid waste would include the one-time temporary generation of construction waste associated with the proposed development of the trail. Recyclable construction materials (e.g., scrap metal, wood, concrete, glass) would be reused as practicable, with non-recyclable materials sent to the HWMA facilities in Eureka or Samoa, California and Humboldt Sanitation's McKinleyville, California transfer station.

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

There are no federal solid waste regulations that 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. A Waste Management Plan would be developed in order to address the reduction, reuse, and recycling of waste materials, as required by City of Arcata Municipal Code 9.54.050 for City building, grading, and demolition permit applications. Following construction, Project operation would not generate additional solid waste. Therefore, no operational impacts would occur and construction impacts resulting from the Project would be less than significant.

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?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes?			X	

The majority of the Project is located within a Local Responsibility Area (LRA) rated as either a moderate or high Fire Hazard Severity Zone (CAL FIRE 2007). There are no very high fire hazard severity zones within the LRA. The Project Area within the LRA is served by Arcata Fire District. The northeastern section of the Project Area, located outside the City of Arcata along the Mad River, is situated in a State Responsibility Area that is mapped by CAL FIRE as a moderate FHSZ. Directly south of West End Road are areas mapped as SRA high FHSZ (CAL FIRE 2022). CAL FIRE serves the Project Area located within the SRA. The Project Area is not located within any lands classified as very high fire severity zones. The nearest land classified as a very high fire hazard severity zone is approximately 12-miles east of the Project Area (CAL FIRE 2022).

The closest fire station to the Project Area is the Arcata Fire District Arcata Station located approximately 0.7-mile south of the Project southern terminus at Sunset Avenue. The Arcata Fire District Mad River Station is located approximately 0.8-mile west of the Project Area along West End Road.

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

A review of the City of Arcata EOP (City of Arcata 2021), Humboldt County EOP (Humboldt County 2015) and the Tsunami Inundation Map for Emergency Planning – County of Humboldt (CGS 2021) indicates that the proposed trail would not permanently impair emergency response activities nor established evacuation routes. The Project operation would not impair implementation or physically interfere with an established emergency response or evacuation plan; see Section 3.9 (Hazards and Hazardous Materials, Impact (f)) for discussion of the Project's effect on emergency response and evacuation plans. Once constructed, the Project would not modify vehicular transportation along US 101, thus emergency response or evacuation via US 101 would not be impeded. The Project would not permanently impede access to any existing roads or pedestrian ways within the Project Area. Implementation of the Project is expected to decrease pedestrian traffic along existing roadways by diverting/rerouting pedestrian traffic to the proposed trail. A less than significant impact would result.

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

The Project would be located in a developed area within an existing railroad ROW and in close proximity to existing highways and surface roads. The topography within the railroad corridor is generally flat, with select portions of the Project Area along West End Road including gradual slope. Grasses, shrubs, and other vegetation are present along the Project Area. The vegetated portions could be susceptible to wildfire during Project construction or operation, as a result of accidental ignition. During construction, all hazardous materials and construction equipment would be appropriately used and stored pursuant to applicable regulations. During operation, the Project would not house any pollutants within the Project Area that may be released if a wildfire occurred. Furthermore, the Project does not include any structures built for human occupancy. Most trail users would be within the Project Area for a short period of time given the purpose is for passive recreational use. Due to the temporary nature of construction, the minimal amount of hazardous materials anticipated to be stored during the construction phase, the fact that the Project is not located within an area of very high fire risk, and given that the Project does not include any structures to be used for human occupancy, the Project would not exacerbate wildfire risks and thereby expose users to pollutants. A less than significant impact would result.

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

Development of the Project would not result in a need to expand infrastructure to the Project Area or in the immediate vicinity of the Project. New roads for fire defense, expanded water sources, or new power lines would not be required. New lighting would be installed in locations along the trail and connected underground to existing light pole boxes or transformers near the Project Area, therefore not increasing the risk of wildfire above existing conditions. No impact would result.

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

The Project is located within an existing railroad corridor traversing generally flat terrain. A segment of the Project alignment within the County portion of West End Road to HBMWD's Essex Control Center near the Park 1 Trailhead has cross slopes greater than 15% in some locations and 30-50% in some locations; however, the majority of the Project Area is located in areas with relative slope stability rating of 0 (relatively stable) with the potential for liquification per County General Plan Geologic maps (Humboldt County 2022). Per Section 3.10 (Hydrology and Water Quality), a small portion of the Project Area near Janes Creek and West End Road is included in the mapped FEMA 100-year flood zone (Figure 3A – FEMA 100-year Flood Zone); however, the trail and the majority of the Project Area is excluded from the FEMA 100-year flood zone (Figure 3A and Figure 3B).

Following a wildfire, erosion within the Project Area could occur due to the loss of vegetation but would be limited to areas immediately adjacent to existing streams and the trail alignment along the Mad River. The Project Area is located along an existing railroad right of way, and the Project's contribution to the Mad River and unnamed tributary watersheds is proportionally very small. Where required to maintain slope stability, the Project design would incorporate retaining walls or similar erosion control features to reduce the potential for slope instability, future erosion, and risk of siltation. Under Alignment Scenario B (Figure 4), a retaining wall would be constructed to prevent future erosion and maintain a stable facility. The final retaining wall designs and locations would follow additional survey and geotechnical investigations and resulting recommendations for the areas in question. The Project would not add new culverts or discharge points where none currently exist. The Project would not change drainage of the Project Area. A less than significant impact would result.

The Project Area does not otherwise include steep slopes that would be susceptible to post-fire landslides. Given the Project Area's relatively flat topography, there are no downslope structures that could be impacted by the Project.

Additionally, the Project does not significantly alter drainage patterns (see Section 3.10 – Hydrology and Water Quality). Any potential impact would be less than significant.

3.21 Mandatory Findings of Significance

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

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

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

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

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? (Less than Significant 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. As discussed in Section 3.11 (Land Use and Planning), the Project is consistent with the goals and policies of the City of Arcata General Plan and the Humboldt County General Plan. The establishment of a trail in Arcata and unincorporated portion of Humboldt County would promote non-motorized transportation and recreation opportunities for the public, which is a goal of the City and County.

Table 3.21-1 provides a list of past, present, and reasonably foreseeable future projects within and near the Project Area, including a brief description of the projects and their anticipated construction schedules (if known). Single-family homes and other similar small-scale uses were not included because of their negligible cumulative effects. Efforts to identify cumulative projects included outreach to the Humboldt County Planning Department, Caltrans, Humboldt County Department of Public Works, and HBMWD. Identified projects are summarized in Table 3.21-1. The Humboldt County Planning Department responded on March 3, 2022, with no eligible projects to consider.

Table 3.21-1 Projects considered for cumulative impacts.

Project Name and Location	Project Description	Estimated Construction Schedule	Relevancy to the Project's Potential Cumulative Impacts
HBMWD - Collector 2 Communications Project *Located within GRTA right of way, in Project Area.*	Extending and undergrounding communications to Collector 2 from the 12kV facility into the parking lot at Park 1.	2023 or later	Would disturb ground near the Project Area near Park 1.
HBMWD - Collector 2 Lateral Rehabilitation Project *Located within GRTA right of way, outside of Project Area.*	Includes construction of a water settling pond in Park 1. Once Collector project is completed, settling pond will be removed and Park will be returned to current condition.	2023	Would disturb ground near the Project Area near Park 1.
HBMWD - Mainline Redundancy Project *Located within GRTA right of way, in Project Area.*	Intercepts main transmission line from Collector 1 at Essex, re-routs up HBMWD driveway to West End Road and then west along the road to just east of Pipeline Road.	2023 or later	Would result in ground disturbance near the driveway entrance to HBMWD's Essex Control Center near the Project Area.
Great Redwood Trail	A rail-to-trail project connecting San Francisco to Humboldt Bay.	Varies by segment	Could contribute to trail usage.
Arcata High School Sports Complex Upgrade *Located directly adjacent to the Project Area, off Sunset Avenue near Arcata Skate Park.*	Expansion and upgrade of sports facilities, amenities, and access.	2020-2022	Could contribute to trail usage.
30th Street Housing Project with Yurok Indian Housing Authority *Located approximately 0.2-mile west of trail alignment.*	Approximately 36 units of affordable housing, safe and accessible walkways and bike lanes, and a pedestrian bridge to connect residents to surrounding neighborhoods and amenities.	2021-2022	Residents would be able to access the Project through newly constructed connection to Janes Creek Meadows Park and St. Louis Road.
Cal Poly Student Expansion and Additional Housing on and off-campus *Cal Poly Humboldt is located approximately 0.2-mile to the east of the Arcata Skate Park. Craftsman's Mall site is located at the end of St. Louis Road, directly adjacent and west of the trail alignment.*	Approximately 2,000 new units of student and multi-family residential housing.	Future, timeline unknown	Could contribute to trail usage. Residents could access trail. New construction may construct new access points to Project.

Project Name and Location	Project Description	Estimated Construction Schedule	Relevancy to the Project's Potential Cumulative Impacts
L.K. Wood and Sunset Ave Roundabout *Located east of US 101 at Cal Poly Humboldt campus.*	Proposed roundabout.	2025 or later	Planned ground disturbance near the Project. Additional pedestrian safety improvements within the Project Area.
Upzones/Zoning Modifications at Craftsman Mall and Valley West Infill Opportunity Zones *Craftsman's Mall site is located at the end of St. Louis Road, directly adjacent and west of the trail alignment. Valley West is located directly west of SR 299.*	Land use planning projects to allow for greater density of development in select locations.	Approx. 2022, no construction would be required.	Neither project is within the Project Area; however, could contribute to trail usage.
Homekey Projects *Located in Valley West at the Days Inn and Red Roof Inn; approximately 0.45-mile west of the Project Area.*	Approximately 140 units of permanent supportive housing in existing motels.	Future, timeline unknown	No relevance, not located within the Project Area; however, could contribute to trail usage.
Foster Avenue Connection and Senior Housing *Located at Foster Avenue; approximately 0.5-mile west of the Project Area.*	New roadway and pedestrian improvments and approximately 185 units of senior housing.	Future, timeline unknown	No relevance, project is located approximately 0.5 mile from Project Area; however, additional housing could contribute to trail usage.
St. Louis Road Trail Extension *Located near St. Louis Road and Sunset Avenue.*	Future trail access.	Future, timeline unknown	This project would provide a new access point to the Arcata Annie & Mary Trail and could contribute to trail usage.
Janes Creek Instream Restoration Project *Located throughout Janes Creek, nearest to the Project Area near West End Court.*	Restoration/habitat modification project to improve instream flow and channel capacity by removing reed canary grass and revegetation.	2015-2018, Complete	No relevance, the project is complete.
South Fork Janes Creek Trailhead and City Acquisitions *Located off West End Road near the US 101 overpass, within the Project Area.*	Habitat restoration and recreation project.	2008-2011, Complete	Ground disturbance would occur in the same area. The proposed Project will enhance the existing trailhead (now referred to as the Arcata Ridge Trailhead). Given the trailhead project was completed more than a decade ago, it is not considered cumulatively relevant.
Aldergrove Marsh Restoration Pilot Project *Located approximately 0.13-mile east of project, near Ericson Way.*	Invasive plant species removal to restore open water habitat and trail enhancement along the south side of the marsh.	2021	Ground disturbance near the Project Area, recently completed and ecologically beneficial.

Project Name and Location	Project Description	Estimated Construction Schedule	Relevancy to the Project's Potential Cumulative Impacts
Janes Creek Multi-Benefit Project *Located to the west of West End Road between the Giuntoli Lane bridge and Aldergrove Road, approximately 0.02-mile from the Project Area*	This future habitat restoration and flood control project is in the initial planning stage but could potentially entail updating current stormwater infrastructure to divert water from Janes Creek on the west side of West End Road or could propose enhancements to the ditches on along the rail corridor in the area.	Future, timeline unknown	Portions of the Janes Creek watershed flood during large storm events. The Project is not anticipated to have any impact on Janes Creek watershed flooding. This future multi-benefit project could improve flooding conditions in the area once implemented.
Frank Martin Court Culvert Replacement *Located near Frank Martin Court within the railroad right of way.*	Culvert replacement under the railroad at Frank Martin Court.	2023-2024	This project is anticipated to be complete before trail construction begins. The Project design would account for the replaced culvert.
Sunset Terrace *Located at 1301 Sunset Avenue; between Sunset Avenue and Foster Avenue.*	Multi-family residential facility with approximately 142 one-bedroom residential units.	Complete	Residents are nearby and could contribute to trail usage.
Canyon Creek Apartments *Located at Todd Court, adjacent to Larson Park.*	Multi-family residential.	Future, timeline unknown	Residents are nearby and could contribute to trail usage.
Westwood Garden Apartments *Located near Westwood Court; approximately 0.45-mile from the Project Area.*	Approximately 102 residential units.	2023 or later	No relevance, due to distance from Project Area; however, additional housing could contribute to trail usage.
Arcata Elementary Safe Routes to School Active Transportation Project *Located within the Sunset and Westwood Neighborhoods from Alliance Road to Arcata Elementary School and Stromberg Avenue to Foster Avenue.*	Pedestrian and bicycle safety education programs, sidewalk and intersection improvements.	2019, Complete	Projects have synergistic goals to provide safe alternative transportation routes to important locations such as schools and residences.
Cannabis Innovation Zone (CIZ) *Located within and surrounding the Aldergrove Business Park along West End Road.*	City land use and zoning modification to allow for medical and commercial cannabis-related activities and development.	No construction	Trail would provide pedestrian and bicycle access to the CIZ from other areas of Arcata and unincorporated Humboldt County.

Project Name and Location	Project Description	Estimated Construction Schedule	Relevancy to the Project's Potential Cumulative Impacts
Arcata Rail with Trail Connectivity Project (aka. Humboldt Bay Trail North) *Located along the GRTA ROW, a portion of US 101 corridor, City-owned ROW, and private property. The trail alignment occurs from the US 101 and Bracut intersection to Larson Park in the City of Arcata.*	Multi-use trail.	Complete	The Project would have connectivity with Humboldt Bay Trail North. Humboldt Bay Trail South would also be completed in approximately 2023, providing a multi-modal route from the Project into Eureka.
Annie & Mary Trial Connection to Blue Lake *Located from the Project northern terminus to Blue Lake.*	Multi-use trail.	Future, timeline unknown	Continue a trail to Blue Lake from the northern terminus of the Project. Could contribute to trail usage. Increase safe alternative transportation routes.
Caltrans - Three Hum Bridges *Located near HUM-101-PM 86.77, approximately 0.15-mile south of Project Area.*	Bridge seismic retrofit.	2021	No relevance.
Caltrans - Hum-101 Strengthen 2 Bridges *Located near HUM-101-PM 87.84 at West End Road Overpass.*	Strengthen US 101 Bridges.	2022	Ground disturbance located near Project alignment.
Caltrans - Hum-299 Off Ramp Improvement *Located at HUM-101-PM 88.3; approximately 0.3-mile from Project Area.*	Construct safety improvements to the highway curve.	2025	No relevance.
Caltrans - 200/299 Separation *Located at HUM-200-PM 2.7; approximately 0.3-mile from Project Area.*	Increase the vertical clearance beneath the overcrossing to allow extra-legal/permit loads to pass. The existing ramp configuration does not allow trucks to bypass the structure.	2022	No relevance.
Caltrans - Arcata to Blue Lake Capm *Located near HUM-299-PM 0; approximately 0.3-mile from Project Area.*	Rehabilitate pavement.	2023	No relevance.
Caltrans - Hum-299 Culverts *Located at various locations along SR 299; approximately 0.2-mile or more from Project Area.*	Repair/replace culverts to restore drainage systems.	2022	No relevance, closest culvert replacement/repair is located on the north side of the Mad River.

Of the projects considered in Table 3.21-1, the following are applicable for consideration of potential cumulative effects:

- The three projects proposed by the HBMWD would also be located within proximity to trail elements at or near Park 1 and involve varying levels of grading and/or ground disturbance. It is unknown if the project would occur at the same time. All proposed activities would be fully permitted and thus, include standard measures for environmental protection. Any potential cumulative adverse impact would remain less than significant.
- The Caltrans US 101 bridge strengthening project would occur near or within the Project Area. However, the Caltrans project is scheduled to be completed before the Project. A cumulative adverse environmental impact would not result.
- The Frank Martin Court Culvert Replacement Project is directly within the Project Area. The drainage project would improve drainage efficiency in the area and the proposed trail Project would have no impact to drainage associated with the Frank Marin Court culvert. A cumulative adverse environmental impact would not result.
- Project goals include providing safe pedestrian and non-motorized travel between areas within Arcata and portions of unincorporated Humboldt County as well as to promote non-motorized transit to reduce climate-related impacts, including VMT. Many of the multi-family, residential development projects and other trail network projects listed in Table 3.21-1, cumulatively with this Project, would result in an environmental benefit to transportation and recreational resources. The residential development projects could increase trail usage by residents and workers supporting the Project goal to promote increased alternative transportation methods to improve connectivity and access to housing, schools, businesses, and recreational areas. By reducing reliance on automobiles for mobility within the community, potential impacts to air quality, GHGs, and energy would also be reduced. A cumulative adverse environmental impact would not result.

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

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

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 would be less than significant.

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5. Report Preparers

5.1 Lead Agency

Emily Sinkhorn, Environmental Services Director, City of Arcata Department of Environmental Services

Delo Freitas, Senior Planner, City of Arcata Community Development Department

5.2 GHD

Andrea Hilton, Environmental Planner

Nathan Sanger, Professional Engineer

Josh Wolf, Professional Engineer

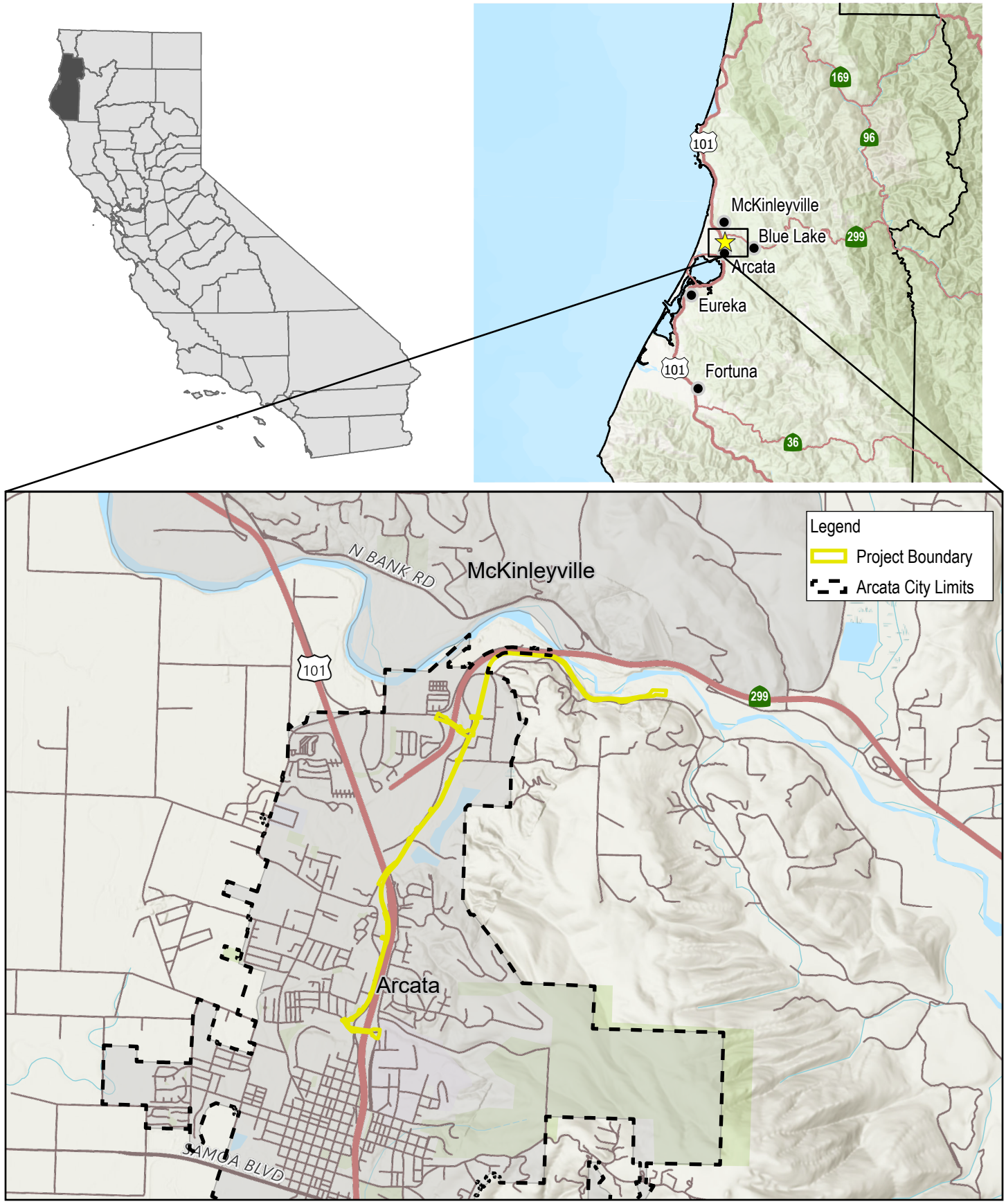
Kristen Orth-Gordinier, Environmental Planner

Chryss Meier, Air Quality Planner
Scott Harris, Environmental Scientist
Misha Schwarz, Senior Environmental Planner

Appendices

Appendix A

Figures



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City of Arcata
Annie & Mary Trail
Connectivity Project

Project No. **11231361**
Revision No. **-**
Date **Feb 2022**

Vicinity Map

FIGURE 1

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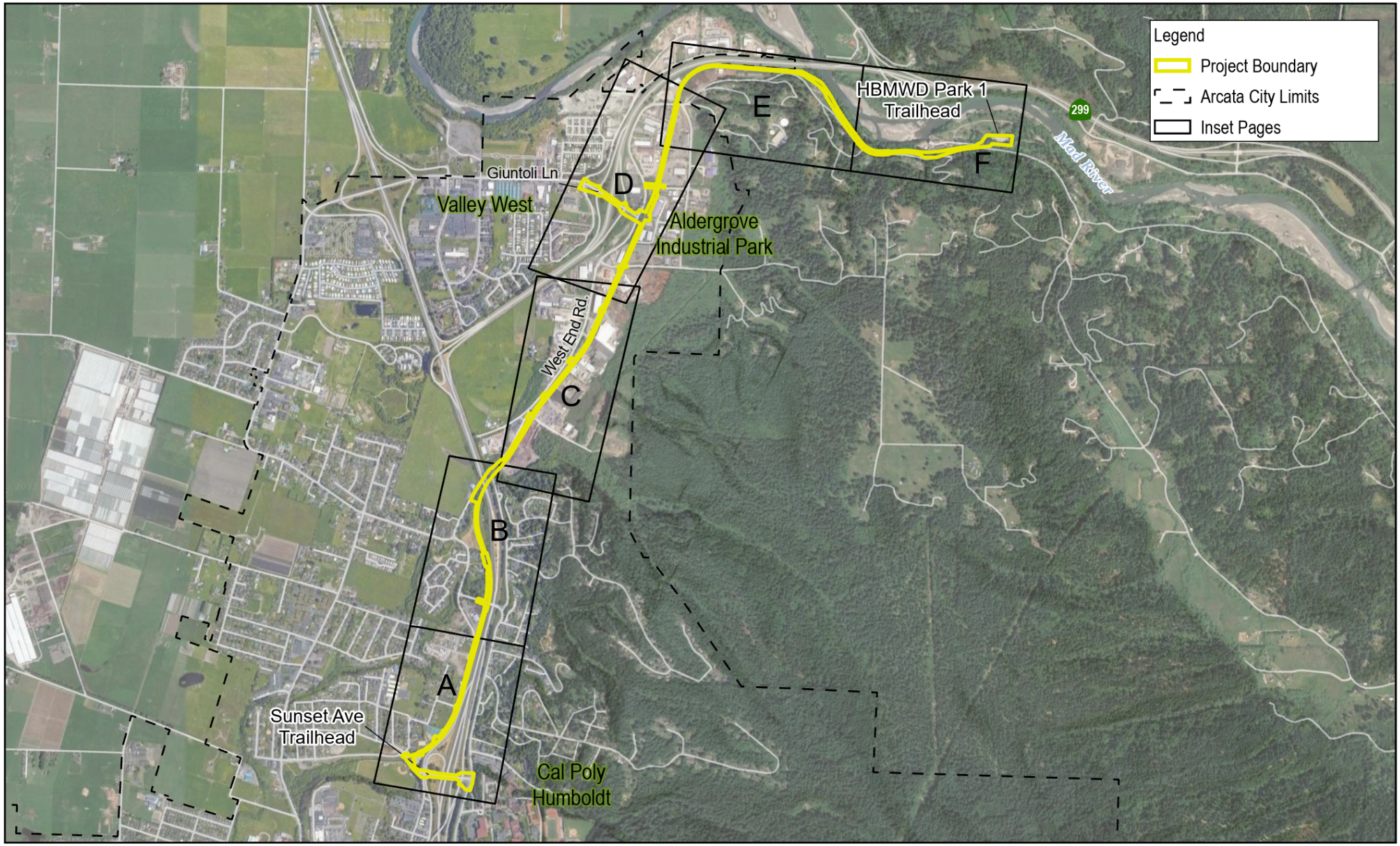

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City of Arcata
Annie & Mary Trail
Connectivity Project

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

Project Overview

FIGURE 2

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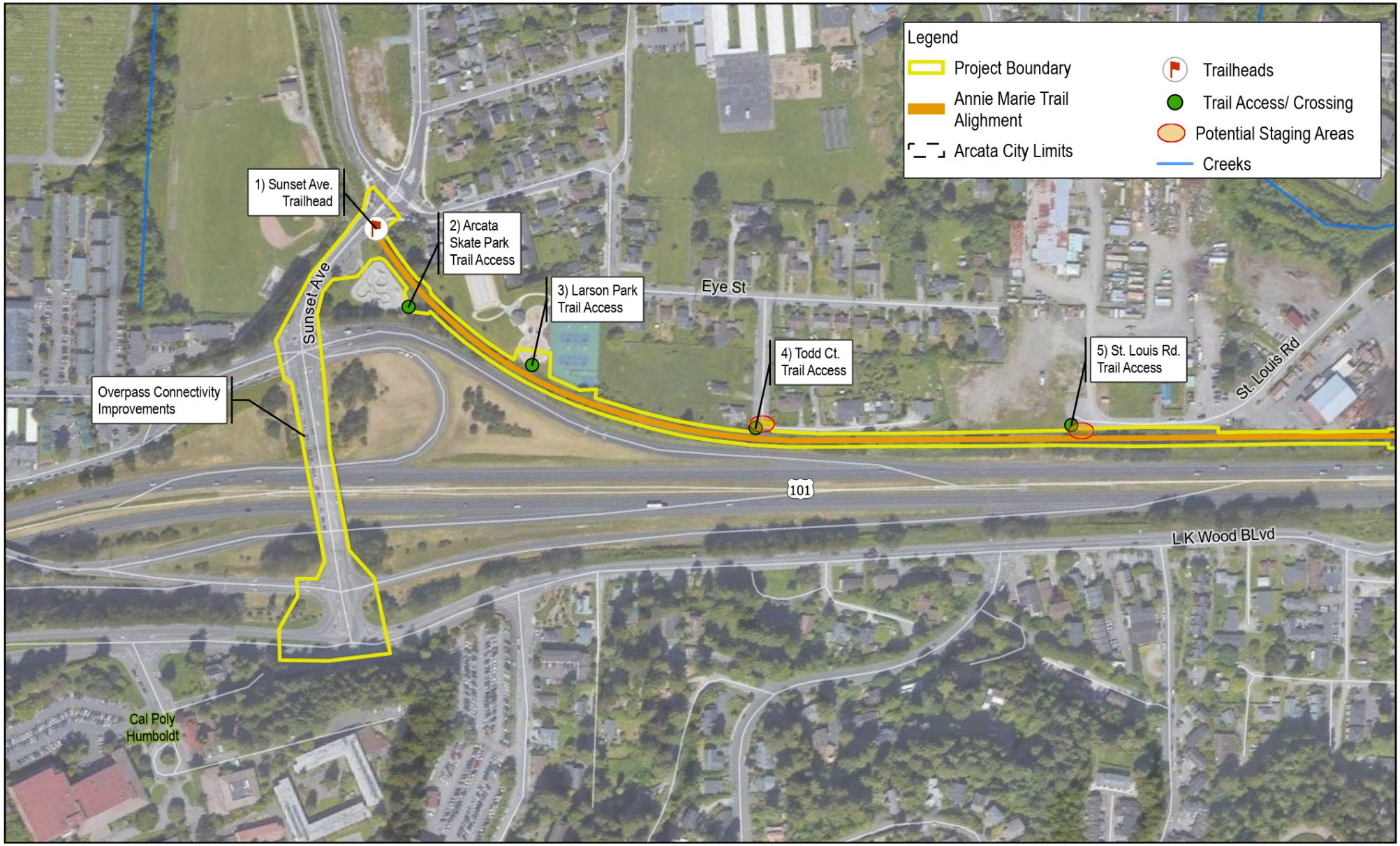

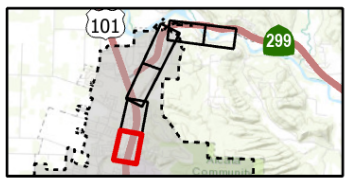

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City of Arcata
Annie & Mary Trail
Connectivity Project

Project Overview
Sunset Ave to St. Lous Rd

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

FIGURE 2A

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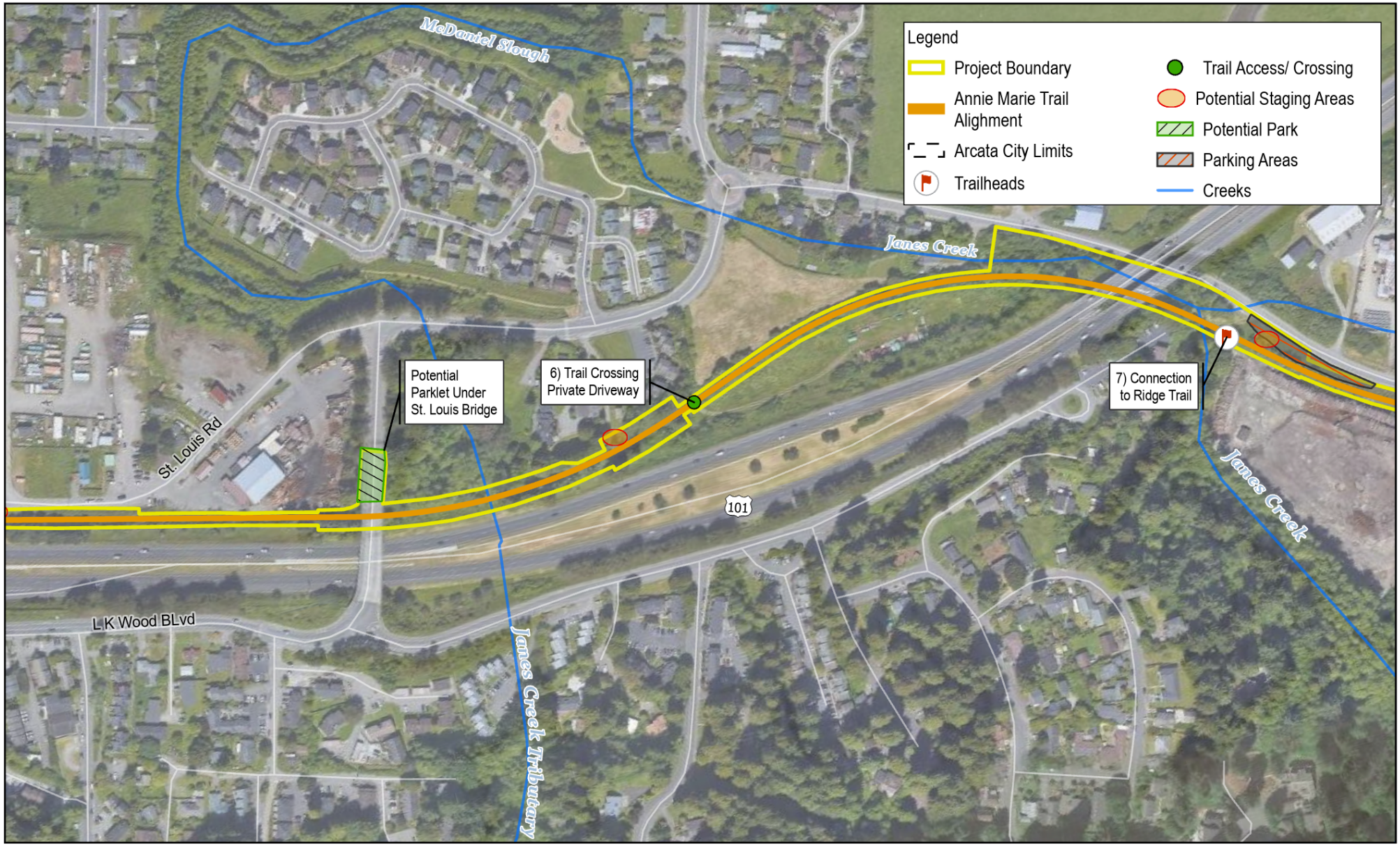

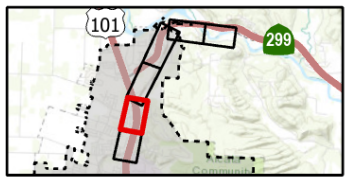

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City of Arcata
Annie & Mary Trail
Connectivity Project

Project Overview
St. Louis Rd. to Arcata Ridge Trailhead

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

FIGURE 2B

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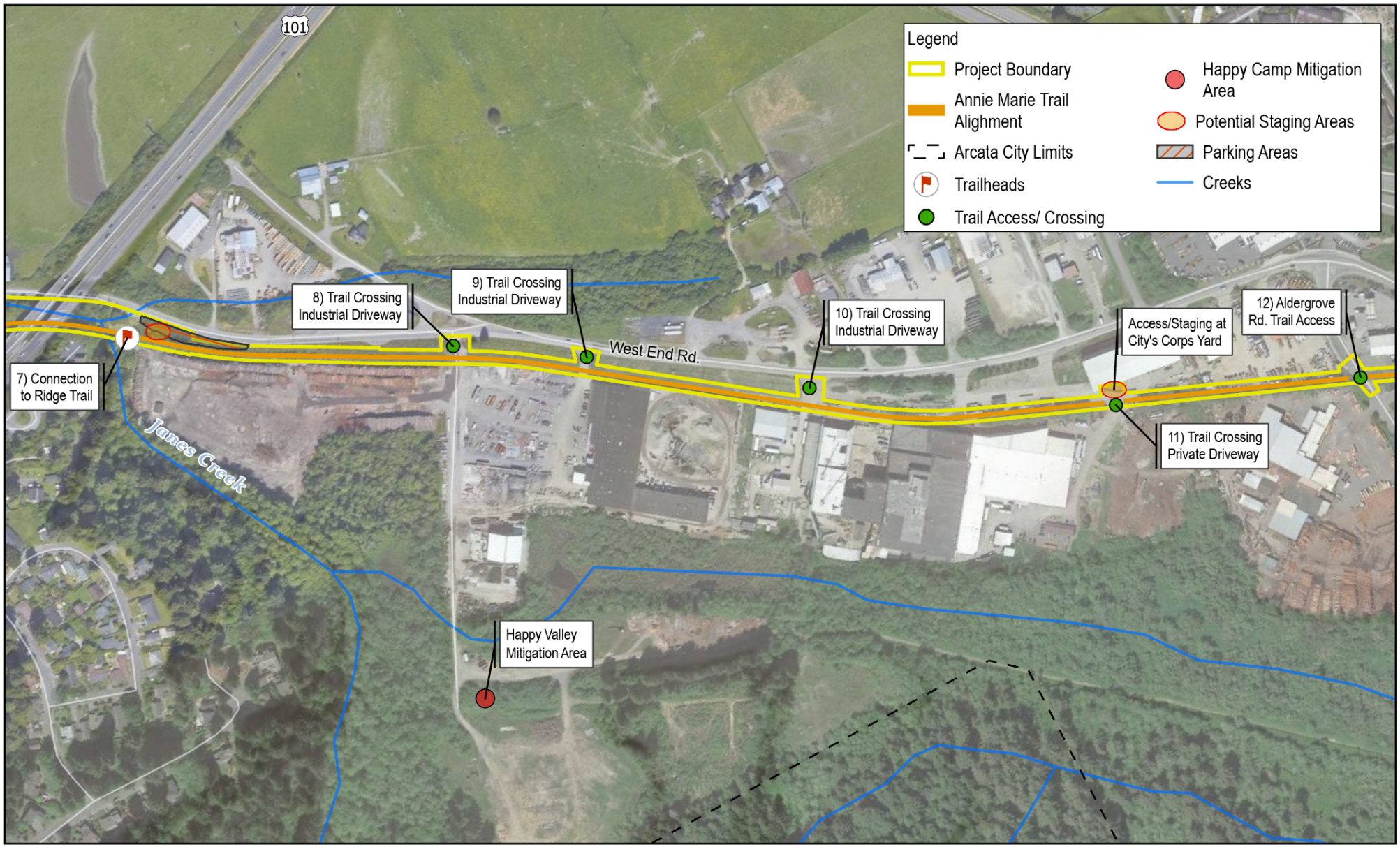

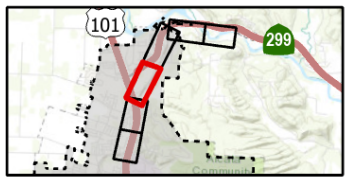

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City of Arcata
Annie & Mary Trail
Connectivity Project

Project Overview
Arcata Ridge Trailhead to Aldergrove Industrial Park

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

FIGURE 2C

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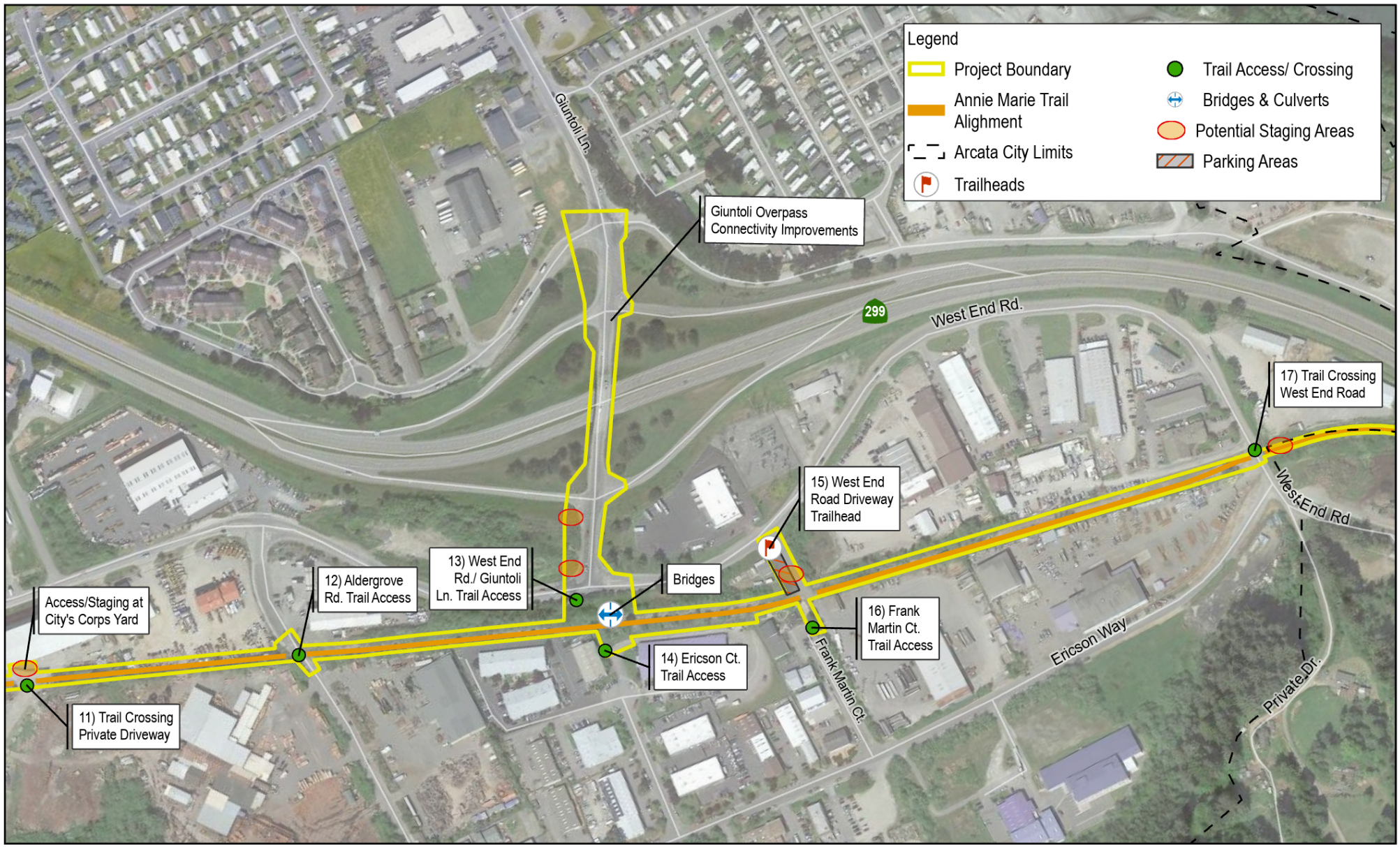

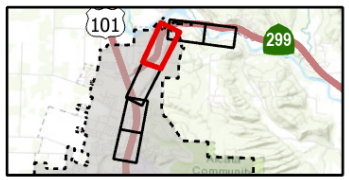

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Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

City of Arcata
Annie & Mary Trail
Connectivity Project

Project Overview
Aldergrove Industrial Park to West End Road

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

FIGURE 2D

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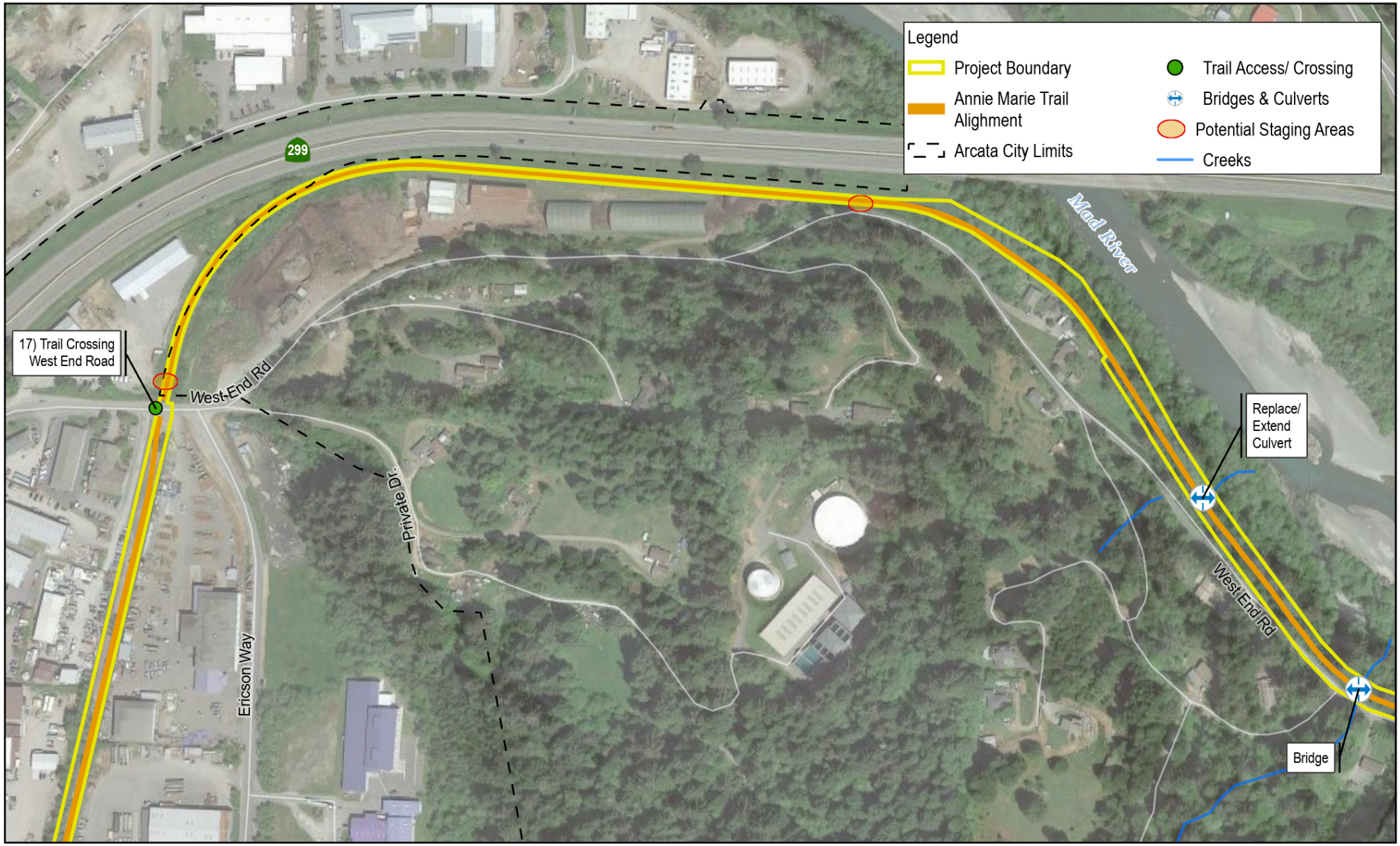

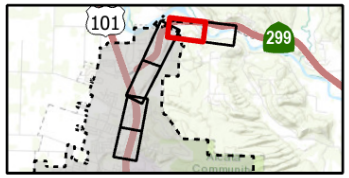

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City of Arcata
Annie & Mary Trail
Connectivity Project

Project Overview
West End Road

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

FIGURE 2E

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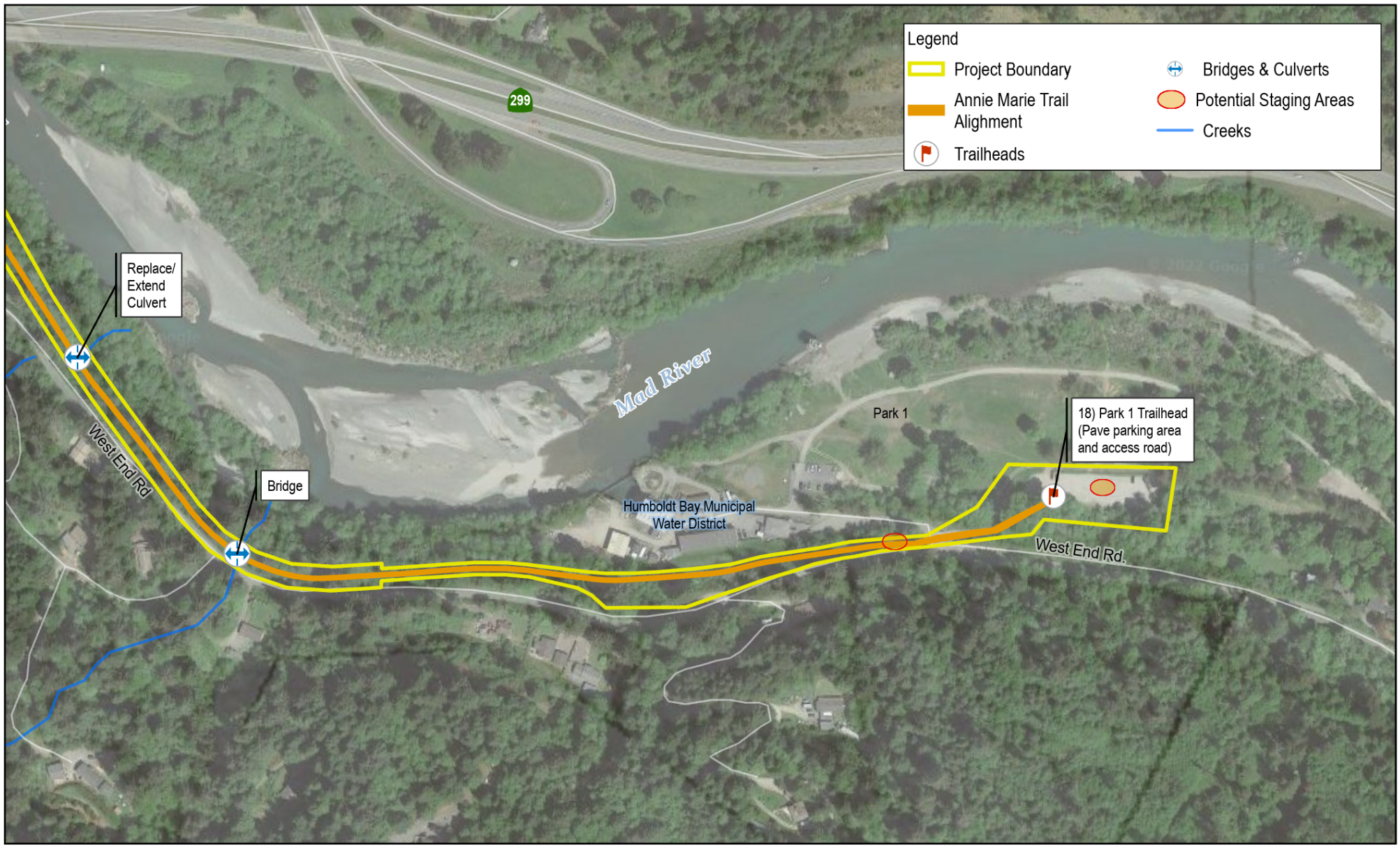

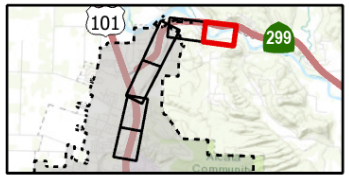

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City of Arcata
Annie & Mary Trail
Connectivity Project

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

Project Overview
West End Road and Park 1 Trailhead

FIGURE 2F

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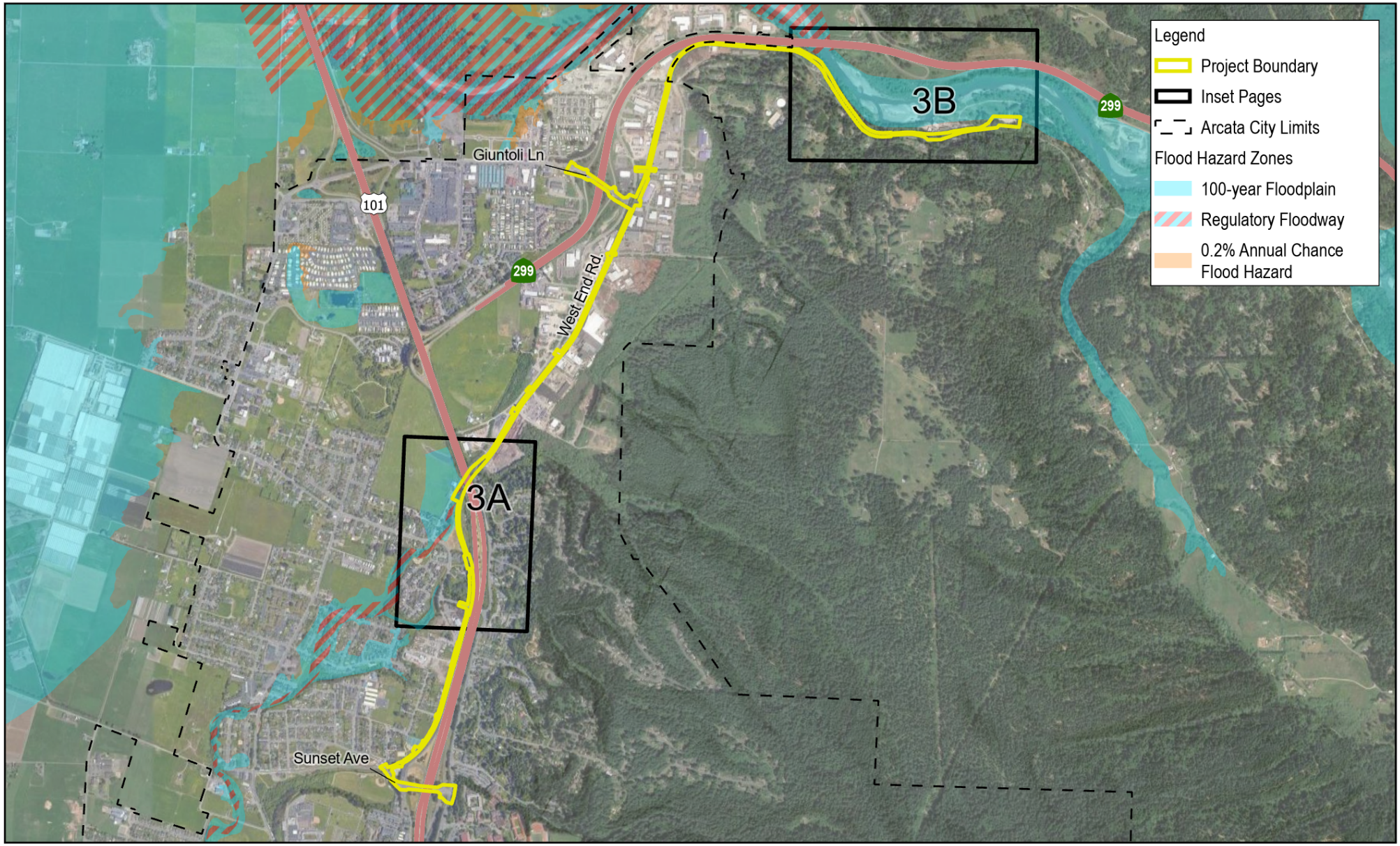

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City of Arcata
Annie & Mary Trail
Connectivity Project

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

FEMA 100-year Flood Zone

FIGURE 3

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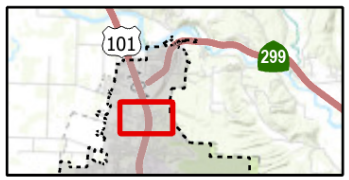
Data source: Tiled service layer: © OpenStreetMap (and) contributors, CC-BY-SA
transportation: USGS The National Map: National Transportation Dataset; U.S. Census Bureau – TIGER/Line; U.S. Forest Service. Data Refreshed July, 2022.
World Hillshade: Esri, NASA, NGA, USGS, FEMA. Created by: jlopez4



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City of Arcata
Annie & Mary Trail
Connectivity Project

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

FEMA 100-year Flood Zone

FIGURE 3A

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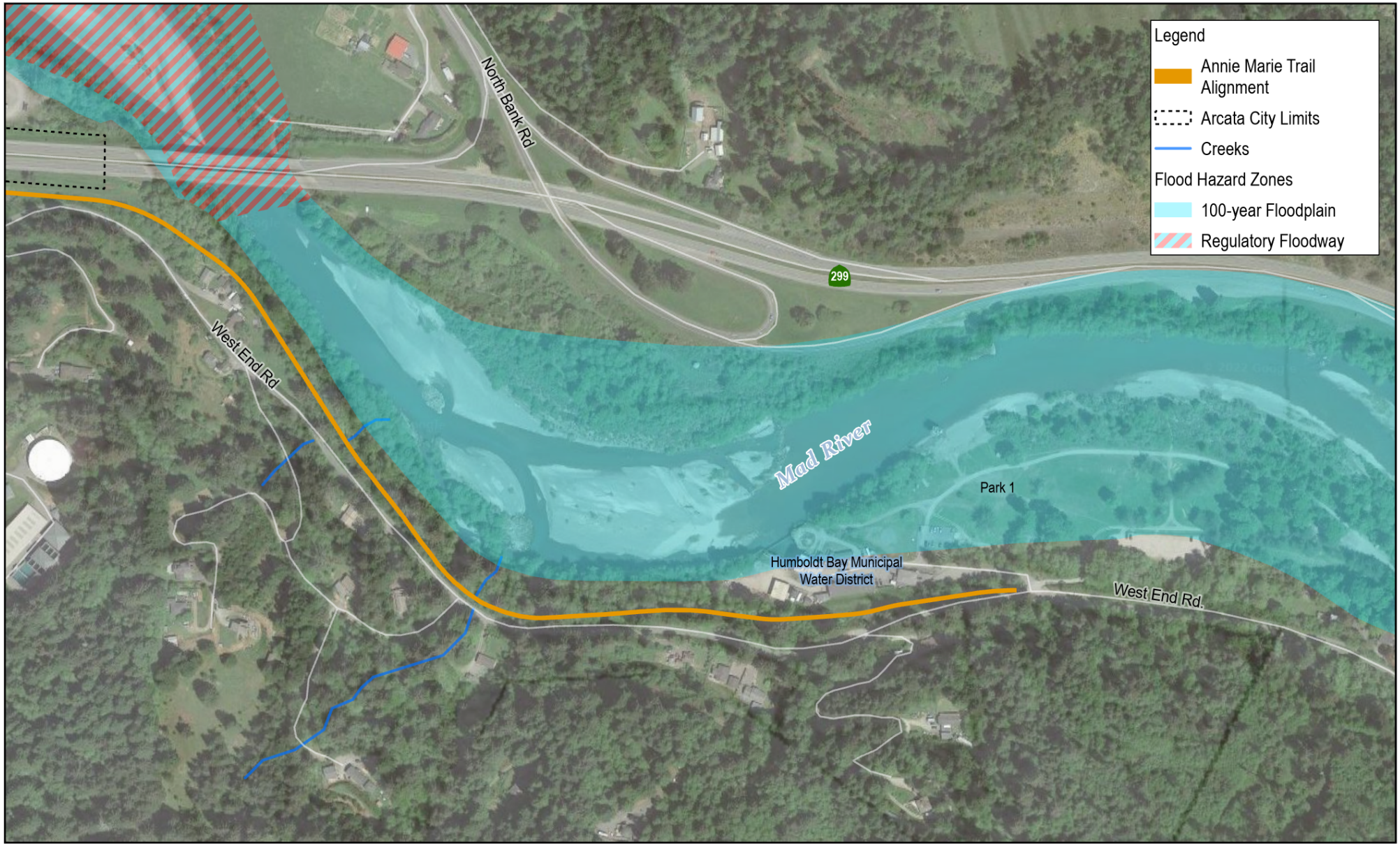

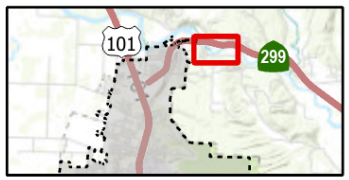

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City of Arcata
Annie & Mary Trail
Connectivity Project

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

FEMA 100-year Flood Zone

FIGURE 3B

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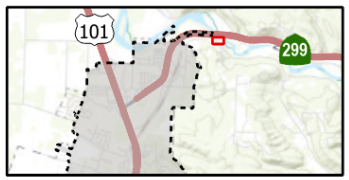

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City of Arcata
Annie & Mary Trail
Connectivity Project

Project No. **1123161**
Revision No. **-**
Date **Oct 2022**

Alignment Scenarios

FIGURE 4

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Appendix B

Mitigation, Monitoring, and Reporting Program

Mitigation Monitoring and Reporting Program
City of Arcata - Arcata Annie & Mary Trail Connectivity Project

SCH No. To be assigned

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
EPA 1 – Stormwater Pollution Prevention Plan (SWPPP) The Project will obtain coverage under State Water Resources Control Board (Water Board) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities. The City will submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the Water Board. The SWPPP will address pollutant sources, best management practices, and other requirements specified in the Order. The SWPPP will include erosion and sediment control measures, and dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner will oversee implementation of the Project SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance.	City's contractor	Performance criteria – North Coast Regional Water Quality Control Board and City standards Reporting actions – As required by the state permit Schedule - During project construction activities, including work and non-work times	
Aesthetics			
MM AES-1: Replanting of Vegetative Visual Screening The minimum required vegetation required for clearing the trail corridor shall be performed. In general, clearing should be limited to within 5-feet of the edge of grading. Vegetative visual screening removed as part of the project would be replanted in specific locations within the Project Area. Planting locations would be identified in the final 100% construction plans and would include: – Where practicable, locations where the removal of vegetative visual screening would make Project improvements less visible from US 101 and/or SR 299; – Where practicable, the small knoll adjacent to US 101 south of Spear Avenue, as defined in City General Plan Policy D-3i-3; and – Where practicable, locations where visual screening is removed between residences, US 101 or SR 299, and the future trail. Plantings would include combinations of appropriate native tree and shrub species that mature in height as compatible with the design and adjacent land uses. Planting would occur concurrent with other project revegetation activities.	City and City's contractor	Performance criteria – City standards Reporting actions – Verify requirements are included in final plans and specifications Schedule – During construction, verify applicable protection measures are implemented post-construction	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
Air Quality			
MM AQ-1: BMPs to Reduce Air Pollution The contractor shall implement the following BMPs during construction: – Disturbed surfaces (e.g., staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered as needed for dust suppression. – All visible mud or dirt track-out onto adjacent public roads shall be removed using street sweepers at least once per day, or as needed to alleviate dust and debris on the roadway. – All vehicle speeds on unpaved roads shall be limited to 15 miles per hour, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures. – All areas to be paved shall be completed as soon as practical. – Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes.	City and City's contractor	Performance criteria – North Coast Unified Air Quality Management District standards Reporting actions – Verify requirements are included in final plans and specifications Schedule – During construction, check jobsite compliance as necessary	
Biological Resources			
MM BIO-1: Protect Special Status Bats A qualified biologist shall conduct habitat surveys for special-status bats in the portions of the Project Area where suitable bat habitat is present. Survey methodology should include visual examination of suitable habitat areas for signs of bat use and may utilize ultrasonic detectors to determine if special status bat species utilize the vicinity. Trees with suitable habitat within 150-feet of construction activities would be examined unless they are privately owned outside of the Project Area and permission to access is not provided by the property owner. Surveys shall be conducted in a manner to detect the presence of hibernating or torpid bats, reproductive colonies and/or migratory stop-over roosts. If no bat utilization or roosts are found, then no further study or action is required. If bats are found to utilize the Project vicinity, or presence is assumed, the following shall be required: – Consultation with the CDFW to determine appropriate measures for protecting bats with young if present, and for implementing measures to exclude non-breeding bat colonies during construction process; and – Phased removal of trees where selected limbs and branches not containing cavities are removed on the first day, with the remainder of the tree removed on the second day.	City and City's biologist and contractor	Performance criteria – California Department of Fish and Wildlife (CDFW) standards Reporting actions – Verify requirements are in final specifications; verify completion and documentation of surveys, if necessary Schedule – Pre-construction and during construction; verify applicable protection measures are implemented	
MM BIO-2: Protect Special Status, Migratory, and Nesting Birds	City and City's biologist and contractor	Performance criteria – California Department of Fish	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
The City shall implement the following to protect migratory, special status, and nesting birds: – Seasonal avoidance of the August 31 through February 1 nesting season would be utilized when feasible, to avoid impacts on native bird species protected under the federal Migratory Bird Treaty Act and California Fish and Game Code that may be present within the Project Area during construction. Clearing of shrubs or other vegetation for construction or maintenance shall be conducted if possible, during the fall and/or winter months from September 1 through January 31, outside of the active nesting season. – If vegetation removal or ground disturbance cannot be confined to work during the non-breeding season, the City shall have a qualified biologist conduct preconstruction 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 biologist shall conduct a minimum of one-day preconstruction survey within the seven-day period prior to vegetation removal and ground-disturbing activities within the area of disturbance as well as within a 500-foot buffer for raptors and 100-foot buffer for common native migratory and special status bird species. Due to the linear nature of the Project, survey locations shall coincide with the location of ground disturbance along the Project alignment. 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 survey before Project work is reinitiated. – If an active nest is found, the qualified biologist would determine the extent of an appropriate construction free buffer zone to be established around the nest and/or operational restrictions in consultation with the CDFW. Buffer zones would be delineated with flagging and maintained until the nests have fledged or nesting activity has ceased. Buffer sizes would take into account factors such as: (1) highway/road and other ambient noise levels, (2) distance from the nest to the highway/road 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 behaviours of the nesting birds. – If an active nest is identified during construction, construction with 500-feet of the nest shall pause until a qualified biologist is able to determine and establish an appropriate buffer in consultation with CDFW.		and Wildlife (CDFW) standards Reporting actions – Verify that protection and avoidance measures are in final specifications; verify completion and documentation of surveys, if necessary Schedule – Pre-construction and during construction; verify applicable disturbance buffers and protection measures are implemented	
MM BIO-3: Protect Northern Red-legged Frog, Foothill Yellow-legged Frog, and Western Pond Turtle	City and City's biologist and contractor	Performance criteria – California Department of Fish	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
The City shall implement the following to protect Northern Red-legged Frog, Foothill Yellow-legged Frog, and Western Pond Turtle: – The City shall retain a qualified biologist to perform a pre-construction survey for the Northern Red-legged Frog, Foothill Yellow-legged Frog, and Western Pond Turtle within seven days prior to commencement of ground disturbance. The survey shall be limited to within 50 feet of suitable habitat within the Project footprint. Suitable habitat would be determined by the City's qualified biologist. The qualified biologist would inspect any work areas containing surface water (not including puddles resulting from rainfall) to ensure tadpoles or frogs are not present. If they are present, the qualified biologist would implement a rescue and relocation operation to move any tadpoles or frogs to a safe location in nearby suitable habitat. – In the event that a Northern Red-legged Frog, Foothill Yellow-legged Frog, or Western Pond Turtle is observed in an active construction zone, the contractor shall halt construction activities in the area and the frog and/or turtle shall be moved to a safe location in similar habitat outside of the construction zone. – Construction within areas of standing water shall be limited to the period of the year between July 1 and October 30 to avoid disturbance to breeding frogs unless a qualified biologist evaluates the areas of standing water and determines they are not suitable habitat.		and Wildlife (CDFW) standards Reporting actions – Completion and documentation of surveys, if necessary Schedule – Pre-construction and during construction; verify applicable disturbance buffers and protection measures are implemented	
MM BIO-4: Protection of Special Status Fish The City shall implement the following to protect special status fish: – Work in wetted waterways shall only occur between June 15 to October 30 during the permitted in-water work window. – Perimeter sediment control and exclusion fencing to limit the disturbance footprint shall be included in the final design plans to limit ground disturbance near the waterways. – No refuelling or equipment maintenance shall occur within 100-feet of any wetlands or waterways.	City and City's biologist and contractor	Performance criteria – California Department of Fish and Wildlife (CDFW) standards Reporting actions – Verify that protection and avoidance measures are in final specifications; verify completion and documentation of surveys, if necessary Schedule – Pre-construction and during construction; verify protection measures are implemented. Check jobsite compliance as necessary	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
MM BIO-5: Protect and Implement Compensatory Mitigation for Sensitive Natural Communities The City shall implement the following to protect special status botanical habitats: – Ground disturbance and vegetation clearing and/or trimming would be confined to the minimum area necessary to facilitate Project implementation. Exclusion fencing shall be required to protect sensitive nature communities and wetlands to remain unimpacted near construction work areas within the Project Area. Exclusion fencing shall be shown on the final 100% construction plan set. – Additionally, the City shall prepare and implement a Habitat Mitigation and Monitoring Plan prepared for the Project and approved by the USACE and the North Coast Regional Water Quality Control Board in executed CWA Section 404 and Section 401 authorizations, which includes: • Compensatory mitigation for permanent impacts to riparian and sensitive natural communities shall occur at ratios and locations acceptable to the California Department of Fish and Wildlife. On-site locations shall be prioritized over off-site locations where feasible. The City will complete monitoring and reporting as required by the California Department of Fish and Wildlife. • Temporary impacts to sensitive natural communities shall be restored in-place to an equivalent function and extent following the close of Project construction. • Where feasible, invasive plant species and nuisance litter shall be removed where they occur within and/or near mapped sensitive natural communities within the Project Area	City and City's biologist and contractor	Performance criteria – California Department of Fish and Wildlife (CDFW) standards Reporting actions – Verify requirements are in final specifications; verify completion and documentation of training Schedule – Pre-construction, during construction, and post-construction; verify applicable habitat mitigation and monitoring is implemented; check jobsite compliance as necessary	
MM BIO-6: Avoidance and Minimization Measures for Waters of the United States and Waters of the State The City shall implement the following avoidance and protection measures for Waters of the United States, Waters of the State, and two-parameter wetlands protected under the City's General Plan: 1. The City shall attempt to avoid or minimize impacts to wetlands/waters to the greatest extent practical in the final design plans. 2. Environmentally Sensitive Area (ESA) exclusion fencing shall be installed prior to construction to protect juxtaposed remaining wetlands from inadvertent construction-related impacts. The locations of the ESA fencing shall be included on the final 100% design plan set for construction.	City and City's biologist and contractor	Performance criteria – City, state, and federal standards, consistent with the project's permits Reporting actions – Verify requirements are in final specifications; verify completion of HMMP Schedule – Pre-construction, during construction, and post-construction; verify applicable compensatory mitigation is implemented; check jobsite compliance as necessary	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
MM BIO-7: Compensatory Mitigation for Wetlands Impacts The City shall complete a wetland delineation to further investigate all areas identified as potential wetlands in the Wetlands Constraints Assessment, as well as any areas that were not previously accessible to field investigations, consistent with City General Plan Policy RC-3a (3). All temporarily impacted three-parameter and two-parameter wetlands shall be restored in placed immediately following construction, to an equal or better condition. The City shall compensate for permanent three-parameter wetlands impacts through restoration, rehabilitation, and/or creation of wetland at a ratio of no less than 1:1.2 and to the satisfaction of permitting agencies. A Habitat Mitigation and Monitoring Plan shall be prepared in coordination with jurisdictional permitting agencies. Compensation for wetlands shall occur so there is no net loss of wetland habitat at ratios to be determined in consultation with and to the satisfaction of jurisdictional permitting agencies. Temporarily impacted wetlands shall be restored in place as part of the Project. The Habitat Mitigation and Monitoring Plan shall be acceptable to jurisdictional permitting agencies 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. The City shall compensate for permanent two-parameter wetland impacts consistent with City General Plan Policy RC-3b (3) at a ratio of no less than 1:1 in area and value of wetlands. Mitigation shall consist of creating and maintaining a new wetland of equal or greater functional capacity and value than the wetland to be filled, restoration of previously degraded wetlands, or enhancement of existing wetland areas. Mitigation requirements for two-parameter wetlands shall also be included the Habitat Mitigation and Monitoring Plan.	City	Performance criteria – City, state, and federal standards, consistent with the project's permits Reporting actions – Verify requirements are in final specifications; verify completion of HMMP Schedule – Pre-construction, during construction, and post-construction; verify applicable compensatory mitigation is implemented; check jobsite compliance as necessary	
Cultural Resources			
MM CR-1: Protection of Archaeological Material The City shall implement the following to protect archaeological resources: – A pre-construction meeting shall be held with field contractors, where the protocols for inadvertent discovery (described below) would be communicated. – If cultural materials for example: chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work shall be stopped within 20-meters (66-feet) of the discovery. Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's	City and City's archaeologist and contractor	Performance criteria – City, state, and federal standards Reporting actions – Verify requirements are in final specifications; verify completion of archaeological monitoring Schedule – During construction; verify completion of archaeological	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
Standards and Guidelines, has evaluated the materials and offered recommendations for further action. Tribal representatives shall be notified.		monitoring as detailed in MM CR-1	
MM CR-2: Identification and Protection of Cultural Resources at the Happy Valley Property If the City implements off-site wetland creation mitigation at the Happy Valley property, the following shall be implemented: – The City shall complete a Cultural Resources Investigation that includes the area to be disturbed. The final report shall be shared with appropriate THPOs of Wiyot Tribe, Bear River Rancheria, and Blue Lake Rancheria. Recommendations of the investigation, if any, shall be implemented by the City; and – The City shall provide formal notification letters to Wiyot Tribe, Bear River Rancheria, and Blue Lake Rancheria notifying them of the planned activity and location a minimum of 90 days in advance of ground disturbance. Any comments from the tribe requesting cultural and/or archaeological monitoring shall be implemented by the City.	City and City's archaeologist and contractor	Performance criteria – City, state, and federal standards Reporting actions – Verify requirements are in final specifications; verify completion of archaeological monitoring; verify completion of noticing as detailed in MM CR-2 Schedule – During construction; verify completion of archaeological monitoring as detailed in MM CR-2	
MM CR-3: Inadvertent Discovery of Human Remains If human remains are discovered during project construction, work would stop at the discovery location, within 66-feet, and any nearby area reasonably suspected to overlie adjacent to human remains (PRC, Section 7050.5). The Humboldt County Coroner would be contacted to determine if the cause of death must be investigated. If the Coroner determines that the remains are of Native American origin, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (PRC, Section 5097). The Coroner would contact the NAHC and appropriate Tribal representatives. The descendants or most likely descendants of the deceased would be contacted, and work would not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98.	City and City's archaeologist and contractor	Performance criteria – City, state, and federal standards Reporting actions – Verify inclusion of language in final plans and specifications Schedule – During construction; verify completion of protection measures and notifications if inadvertent discovery	
Hazards and Hazardous Materials			
MM HAZ-1: Characterize Existing Soil and Groundwater Conditions Within Project Area The City shall complete the following requirements to characterize the soil and groundwater in areas with the potential for contamination within the disturbance footprint, including any	City and City's contractor	Performance criteria – City and state standards Reporting actions – Verify requirements are in final	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
required excavation at the off-site Happy Valley property identified for wetland mitigation, by completing a Phase 1 Environmental Site Assessment. – If recommended in the Phase 1 Environmental Site Assessment, a Sampling Analysis Plan (SAP) shall be prepared by the City to define sample locations, boring depths based upon design, estimated soil volumes, and number of borings to adequately pre-characterize project alignment soils and/or groundwater for the portions of the Project Area that align with the former railroad corridor. The SAP shall include pre-characterization of soil and groundwater for potential constituents of concern (COCs) prior to initiating construction activities. The SAP shall further include specifications for surficial samples that will be collected to the proposed depth of excavation in the areas where ground disturbing activities are proposed. • If recommended in the Phase 1 Environmental Site Assessment and prior to construction of the Project, pre-characterization soil and/or groundwater sampling shall be conducted at SAP identified locations within the limits of planned ground disturbance. • If pre-characterization sample analysis determines COCs above regulatory background thresholds for human and environmental health exposure, then a site-specific Soil and Groundwater Management (SGMP) shall be prepared to address proper handling of potentially impacted soil and groundwater prior to waste stream characterization, proper disposal, and handling requirements for worker protection. – If results of the SAP and/or SGMP indicate special material handling and disposal is required, a SESTP shall be prepared once the areas of Project ground disturbance are confirmed and prior to construction. The SESTP will specify measures to appropriately manage soil spills during Project construction for waste characterization, worker protection, fugitive emissions control and disposal. Alternatively, soil spoils can be initially field screened (visual, olfactory, photo-ionization detector, etc.) and stockpiled, then subsequently characterized for appropriate disposal methods according to applicable waste facility requirements. – If recommended as an outcome of pre-construction characterization results from SAP sampling, the City's contractor shall prepare a Soil and Groundwater Management Plan. The Soil and Groundwater Management Plan shall address the characterization of soil during construction shall occur where disturbance is proximal to known adjacent impacted properties and materials as identified in the Phase 1 Initiate Site Assessment (SHN 2010). Characterization shall occur where soils are to be excavated or regraded near remaining treated railroad trestles and/or treated creosote piles. Any groundwater encountered during construction proximal to known adjacent impacted properties and/or remaining treated railroad trestles and piles shall also be characterized prior to legal disposal. Any soil/and or groundwater determined to exceed thresholds for constituents of concerns shall be handled and disposed of pursuant to applicable to California regulations, to be detailed in the Soil		specifications; verify completion of SAP; verify completion of SGMP and SESTP, if applicable Schedule – Pre- and during construction; verify requirements are implemented; check jobsite compliance as necessary	

Environmental Protections Actions (EPA) and Mitigation Measures (MM)	Monitoring Responsibility	Monitoring/Reporting Action & Schedule	Verification (Initials/Date)
and Groundwater Management Plan. The Soil and Groundwater Management Plan shall be reviewed and approved by the City prior to construction. – Where Project construction design proposes to include demolition or deconstruction of existing structures (bridges), subsequent pre-demolition hazard materials sampling shall occur for asbestos in accordance with US Environmental Protection Agency National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations.			
Transportation			
MM 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.	City and City's contractor	Performance criteria – City and County standards Reporting actions – Verify requirements are in final specifications; verify completion Schedule – Pre- and during construction; verify jobsite compliance as necessary	

Appendix C

CalEEMod Modeling Information and Results

A&M Trail Construction

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	8.60	Acre	8.60	374,616.00	0
Other Non-Asphalt Surfaces	0.90	Acre	0.90	39,204.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2025
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 - 0.9 acre parking lot. 8.6 acres total trail & associated improvements

Construction Phase - Project-Specific Phasing

Off-road Equipment - Project-Specific Fleet Mix

Grading - 10,646 CY Import, 6,487 CY Export

Demolition - Demo Export is incorporated into Grading Export for modeling purposes

Trips and VMT - Default Worker Trips (except Phase 10), Default Vendor Trips, Default Hauling Trips

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	250	0
tblAreaCoating	Area_Parking	2352	0
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	230.00	15.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.51	1.00
tblFleetMix	LDA	0.51	1.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LDT2	0.21	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	5.2450e-003	0.00
tblFleetMix	LHD2	5.2450e-003	0.00
tblFleetMix	MCY	5.0140e-003	0.00
tblFleetMix	MCY	5.0140e-003	0.00
tblFleetMix	MDV	0.13	0.00
tblFleetMix	MDV	0.13	0.00
tblFleetMix	MH	6.5000e-004	0.00
tblFleetMix	MH	6.5000e-004	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	MHD	0.01	0.00

tblFleetMix	OBUS	3.6390e-003	0.00
tblFleetMix	OBUS	3.6390e-003	0.00
tblFleetMix	SBUS	1.4720e-003	0.00
tblFleetMix	SBUS	1.4720e-003	0.00
tblFleetMix	UBUS	1.3080e-003	0.00
tblFleetMix	UBUS	1.3080e-003	0.00
tblGrading	MaterialExported	0.00	6,487.00
tblGrading	MaterialImported	0.00	10,646.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes

tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Pavers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	WorkerTripNumber	174.00	10.00

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					
2024	0.1691	1.7101	1.9471	4.4800e-003	0.1834	0.0586	0.2420	0.0797	0.0541	0.1339	0.0000	400.3317	400.3317	0.0957	0.0000	402.7249
Maximum	**0.1691**	**1.7101**	**1.9471**	**4.4800e-003**	**0.1834**	**0.0586**	**0.2420**	**0.0797**	**0.0541**	**0.1339**	**0.0000**	**400.3317**	**400.3317**	**0.0957**	**0.0000**	**402.7249**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	01 Clearing and Grubbing	Site Preparation	3/28/2024	4/24/2024	5	20	
2	02 Demolition	Demolition	3/28/2024	4/24/2024	5	20	
3	03 Earthwork and Grading	Grading	4/28/2024	6/21/2024	5	40	
4	04 Utilities	Trenching	6/21/2024	7/18/2024	5	20	
5	05 Guintoli Modifications	Grading	6/21/2024	8/1/2024	5	30	
6	06 Retaining Wall	Grading	6/28/2024	8/22/2024	5	40	
7	07 Bridge Installation	Grading	8/28/2024	9/10/2024	5	10	
8	08 Hardscaping and Amenities	Site Preparation	8/28/2024	10/8/2024	5	30	
9	09 Paving	Paving	10/28/2024	11/22/2024	5	20	
10	10 Striping and Signage	Building Construction	10/28/2024	11/15/2024	5	15	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.9

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
01 Clearing and Grubbing	Excavators	3	8.00	158	0.38
01 Clearing and Grubbing	Rubber Tired Dozers	2	8.00	247	0.40
01 Clearing and Grubbing	Rubber Tired Loaders	2	8.00	203	0.36
01 Clearing and Grubbing	Skid Steer Loaders	2	8.00	65	0.37
01 Clearing and Grubbing	Tractors/Loaders/Backhoes	2	8.00	97	0.37
02 Demolition	Aerial Lifts	1	8.00	63	0.31
02 Demolition	Air Compressors	1	8.00	78	0.48
02 Demolition	Excavators	2	8.00	158	0.38
02 Demolition	Rubber Tired Loaders	2	8.00	203	0.36
02 Demolition	Skid Steer Loaders	2	8.00	65	0.37

02 Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
03 Earthwork and Grading	Dumpers/Tenders	1	8.00	16	0.38
03 Earthwork and Grading	Excavators	1	8.00	158	0.38
03 Earthwork and Grading	Graders	2	8.00	187	0.41
03 Earthwork and Grading	Rollers	1	2.00	80	0.38
03 Earthwork and Grading	Rollers	1	2.00	80	0.38
03 Earthwork and Grading	Rubber Tired Loaders	2	8.00	203	0.36
03 Earthwork and Grading	Skid Steer Loaders	2	8.00	65	0.37
03 Earthwork and Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
04 Utilities	Dumpers/Tenders	1	8.00	16	0.38
04 Utilities	Skid Steer Loaders	2	8.00	65	0.37
04 Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
05 Guintoli Modifications	Aerial Lifts	2	8.00	63	0.31
05 Guintoli Modifications	Air Compressors	1	1.50	78	0.48
05 Guintoli Modifications	Concrete/Industrial Saws	1	1.00	81	0.73
05 Guintoli Modifications	Excavators	1	8.00	158	0.38
05 Guintoli Modifications	Skid Steer Loaders	2	8.00	65	0.37
05 Guintoli Modifications	Tractors/Loaders/Backhoes	1	8.00	97	0.37
06 Retaining Wall	Dumpers/Tenders	1	8.00	16	0.38
06 Retaining Wall	Excavators	2	8.00	158	0.38
06 Retaining Wall	Rollers	1	4.00	80	0.38
06 Retaining Wall	Rollers	1	4.00	80	0.38
06 Retaining Wall	Rough Terrain Forklifts	2	8.00	100	0.40
06 Retaining Wall	Rubber Tired Loaders	1	8.00	203	0.36
06 Retaining Wall	Skid Steer Loaders	2	8.00	65	0.37
06 Retaining Wall	Tractors/Loaders/Backhoes	1	8.00	97	0.37
07 Bridge Installation	Cranes	1	8.00	231	0.29
07 Bridge Installation	Excavators	1	8.00	158	0.38
07 Bridge Installation	Skid Steer Loaders	1	8.00	65	0.37
07 Bridge Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

08 Hardscaping and Amenities	Skid Steer Loaders	2	8.00	65	0.37
08 Hardscaping and Amenities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
09 Paving	Pavers	1	8.00	130	0.42
09 Paving	Rollers	1	8.00	80	0.38
09 Paving	Rollers	1	8.00	80	0.38
09 Paving	Skid Steer Loaders	2	8.00	65	0.37
09 Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37
10 Striping and Signage	Concrete/Industrial Saws	1	2.00	81	0.73
10 Striping and Signage	Skid Steer Loaders	1	8.00	65	0.37
10 Striping and Signage	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
01 Clearing and Grubbing	11	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
10 Striping and Signage	3	10.00	68.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
02 Demolition	10	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
03 Earthwork and Grading	12	30.00	0.00	2,142.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
04 Utilities	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
05 Guintoli Modifications	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
06 Retaining Wall	11	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
07 Bridge Installation	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
08 Hardscaping and Amenities	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
09 Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 01 Clearing and Grubbing - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1204	0.0000	0.1204	0.0662	0.0000	0.0662	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0285	0.2767	0.2629	5.5000e-004		0.0119	0.0119		0.0110	0.0110	0.0000	48.7199	48.7199	0.0158	0.0000	49.1139
Total	**0.0285**	**0.2767**	**0.2629**	**5.5000e-004**	**0.1204**	**0.0119**	**0.1324**	**0.0662**	**0.0110**	**0.0772**	**0.0000**	**48.7199**	**48.7199**	**0.0158**	**0.0000**	**49.1139**

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	1.8900e-003	1.4100e-003	0.0113	2.0000e-005	2.1600e-003	2.0000e-005	2.1800e-003	5.8000e-004	2.0000e-005	5.9000e-004	0.0000	1.7652	1.7652	9.0000e-005	0.0000	1.7675
Total	**1.8900e-003**	**1.4100e-003**	**0.0113**	**2.0000e-005**	**2.1600e-003**	**2.0000e-005**	**2.1800e-003**	**5.8000e-004**	**2.0000e-005**	**5.9000e-004**	**0.0000**	**1.7652**	**1.7652**	**9.0000e-005**	**0.0000**	**1.7675**

3.3 02 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0156	0.1416	0.2027	3.9000e-004		5.7000e-003	5.7000e-003		5.3100e-003	5.3100e-003	0.0000	34.0567	34.0567	0.0101	0.0000	34.3094
Total	**0.0156**	**0.1416**	**0.2027**	**3.9000e-004**		**5.7000e-003**	**5.7000e-003**		**5.3100e-003**	**5.3100e-003**	**0.0000**	**34.0567**	**34.0567**	**0.0101**	**0.0000**	**34.3094**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6900e-003	1.2600e-003	0.0101	2.0000e-005	1.9300e-003	2.0000e-005	1.9400e-003	5.1000e-004	1.0000e-005	5.3000e-004	0.0000	1.5760	1.5760	8.0000e-005	0.0000	1.5781
Total	**1.6900e-003**	**1.2600e-003**	**0.0101**	**2.0000e-005**	**1.9300e-003**	**2.0000e-005**	**1.9400e-003**	**5.1000e-004**	**1.0000e-005**	**5.3000e-004**	**0.0000**	**1.5760**	**1.5760**	**8.0000e-005**	**0.0000**	**1.5781**

3.4 03 Earthwork and Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0222	0.0000	0.0222	2.4400e-003	0.0000	2.4400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0391	0.4029	0.3597	8.7000e-004		0.0148	0.0148		0.0136	0.0136	0.0000	75.9312	75.9312	0.0243	0.0000	76.5391
Total	**0.0391**	**0.4029**	**0.3597**	**8.7000e-004**	**0.0222**	**0.0148**	**0.0369**	**2.4400e-003**	**0.0136**	**0.0161**	**0.0000**	**75.9312**	**75.9312**	**0.0243**	**0.0000**	**76.5391**

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	6.0800e-003	0.2096	0.0416	8.1000e-004	0.0176	5.6000e-004	0.0182	4.8500e-003	5.4000e-004	5.3900e-003	0.0000	77.1482	77.1482	1.6900e-003	0.0000	77.1904
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	4.0500e-003	3.0100e-003	0.0242	4.0000e-005	4.6300e-003	4.0000e-005	4.6600e-003	1.2300e-003	4.0000e-005	1.2700e-003	0.0000	3.7825	3.7825	2.0000e-004	0.0000	3.7875
Total	**0.0101**	**0.2126**	**0.0658**	**8.5000e-004**	**0.0223**	**6.0000e-004**	**0.0228**	**6.0800e-003**	**5.8000e-004**	**6.6600e-003**	**0.0000**	**80.9306**	**80.9306**	**1.8900e-003**	**0.0000**	**80.9778**

3.5 04 Utilities - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.8600e-003	0.0501	0.0749	1.1000e-004		2.0300e-003	2.0300e-003		1.8800e-003	1.8800e-003	0.0000	9.6670	9.6670	3.0100e-003	0.0000	9.7422
Total	**4.8600e-003**	**0.0501**	**0.0749**	**1.1000e-004**		**2.0300e-003**	**2.0300e-003**		**1.8800e-003**	**1.8800e-003**	**0.0000**	**9.6670**	**9.6670**	**3.0100e-003**	**0.0000**	**9.7422**

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	8.8000e-004	6.5000e-004	5.2400e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8195	0.8195	4.0000e-005	0.0000	0.8206
Total	**8.8000e-004**	**6.5000e-004**	**5.2400e-003**	**1.0000e-005**	**1.0000e-003**	**1.0000e-005**	**1.0100e-003**	**2.7000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8195**	**0.8195**	**4.0000e-005**	**0.0000**	**0.8206**

3.6 05 Guintoli Modifications - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0300e-003	0.0925	0.1705	2.6000e-004		3.5400e-003	3.5400e-003		3.2900e-003	3.2900e-003	0.0000	22.7638	22.7638	6.8300e-003	0.0000	22.9345
Total	**9.0300e-003**	**0.0925**	**0.1705**	**2.6000e-004**	**0.0000**	**3.5400e-003**	**3.5400e-003**	**0.0000**	**3.2900e-003**	**3.2900e-003**	**0.0000**	**22.7638**	**22.7638**	**6.8300e-003**	**0.0000**	**22.9345**

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	2.0300e-003	1.5100e-003	0.0121	2.0000e-005	2.3100e-003	2.0000e-005	2.3300e-003	6.2000e-004	2.0000e-005	6.3000e-004	0.0000	1.8912	1.8912	1.0000e-004	0.0000	1.8937
Total	**2.0300e-003**	**1.5100e-003**	**0.0121**	**2.0000e-005**	**2.3100e-003**	**2.0000e-005**	**2.3300e-003**	**6.2000e-004**	**2.0000e-005**	**6.3000e-004**	**0.0000**	**1.8912**	**1.8912**	**1.0000e-004**	**0.0000**	**1.8937**

3.7 06 Retaining Wall - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0261	0.2585	0.3942	6.8000e-004		0.0103	0.0103		9.5200e-003	9.5200e-003	0.0000	59.7201	59.7201	0.0191	0.0000	60.1970
Total	**0.0261**	**0.2585**	**0.3942**	**6.8000e-004**	**0.0000**	**0.0103**	**0.0103**	**0.0000**	**9.5200e-003**	**9.5200e-003**	**0.0000**	**59.7201**	**59.7201**	**0.0191**	**0.0000**	**60.1970**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7800e-003	2.8100e-003	0.0226	4.0000e-005	4.3200e-003	4.0000e-005	4.3500e-003	1.1500e-003	3.0000e-005	1.1800e-003	0.0000	3.5303	3.5303	1.9000e-004	0.0000	3.5350
Total	**3.7800e-003**	**2.8100e-003**	**0.0226**	**4.0000e-005**	**4.3200e-003**	**4.0000e-005**	**4.3500e-003**	**1.1500e-003**	**3.0000e-005**	**1.1800e-003**	**0.0000**	**3.5303**	**3.5303**	**1.9000e-004**	**0.0000**	**3.5350**

3.8 07 Bridge Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5900e-003	0.0359	0.0433	8.0000e-005		1.5400e-003	1.5400e-003		1.4200e-003	1.4200e-003	0.0000	7.0824	7.0824	2.2900e-003	0.0000	7.1397
Total	**3.5900e-003**	**0.0359**	**0.0433**	**8.0000e-005**	**0.0000**	**1.5400e-003**	**1.5400e-003**	**0.0000**	**1.4200e-003**	**1.4200e-003**	**0.0000**	**7.0824**	**7.0824**	**2.2900e-003**	**0.0000**	**7.1397**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.5000e-004	2.0200e-003	0.0000	3.9000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3152	0.3152	2.0000e-005	0.0000	0.3156
Total	**3.4000e-004**	**2.5000e-004**	**2.0200e-003**	**0.0000**	**3.9000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3152**	**0.3152**	**2.0000e-005**	**0.0000**	**0.3156**

3.9 08 Hardscaping and Amenities - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1900e-003	0.0682	0.1086	1.6000e-004		2.7900e-003	2.7900e-003		2.5700e-003	2.5700e-003	0.0000	13.6713	13.6713	4.4200e-003	0.0000	13.7818
Total	**6.1900e-003**	**0.0682**	**0.1086**	**1.6000e-004**	**0.0000**	**2.7900e-003**	**2.7900e-003**	**0.0000**	**2.5700e-003**	**2.5700e-003**	**0.0000**	**13.6713**	**13.6713**	**4.4200e-003**	**0.0000**	**13.7818**

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	1.0100e-003	7.5000e-004	6.0500e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1700e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9456	0.9456	5.0000e-005	0.0000	0.9469
Total	**1.0100e-003**	**7.5000e-004**	**6.0500e-003**	**1.0000e-005**	**1.1600e-003**	**1.0000e-005**	**1.1700e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9456**	**0.9456**	**5.0000e-005**	**0.0000**	**0.9469**

3.10 09 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.8800e-003	0.0934	0.1383	2.0000e-004		4.2900e-003	4.2900e-003		3.9400e-003	3.9400e-003	0.0000	17.8545	17.8545	5.7700e-003	0.0000	17.9989
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.8800e-003**	**0.0934**	**0.1383**	**2.0000e-004**		**4.2900e-003**	**4.2900e-003**		**3.9400e-003**	**3.9400e-003**	**0.0000**	**17.8545**	**17.8545**	**5.7700e-003**	**0.0000**	**17.9989**

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	1.2200e-003	9.0000e-004	7.2600e-003	1.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1347	1.1347	6.0000e-005	0.0000	1.1362
Total	**1.2200e-003**	**9.0000e-004**	**7.2600e-003**	**1.0000e-005**	**1.3900e-003**	**1.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1347**	**1.1347**	**6.0000e-005**	**0.0000**	**1.1362**

3.11 10 Striping and Signage - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.1300e-003	0.0216	0.0340	5.0000e-005		9.1000e-004	9.1000e-004		8.5000e-004	8.5000e-004	0.0000	4.4259	4.4259	1.1500e-003	0.0000	4.4548
Total	**2.1300e-003**	**0.0216**	**0.0340**	**5.0000e-005**		**9.1000e-004**	**9.1000e-004**		**8.5000e-004**	**8.5000e-004**	**0.0000**	**4.4259**	**4.4259**	**1.1500e-003**	**0.0000**	**4.4548**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6500e-003	0.0462	0.0125	1.4000e-004	3.2700e-003	8.0000e-005	3.3500e-003	9.5000e-004	8.0000e-005	1.0300e-003	0.0000	13.0576	13.0576	4.5000e-004	0.0000	13.0688
Worker	5.1000e-004	3.8000e-004	3.0300e-003	1.0000e-005	5.8000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4728	0.4728	2.0000e-005	0.0000	0.4734
Total	**2.1600e-003**	**0.0466**	**0.0156**	**1.5000e-004**	**3.8500e-003**	**8.0000e-005**	**3.9300e-003**	**1.1000e-003**	**8.0000e-005**	**1.1900e-003**	**0.0000**	**13.5304**	**13.5304**	**4.7000e-004**	**0.0000**	**13.5422**

Appendix D

Wildlife Habitat Assessment

Phone: (707) 822-5785 **Email:** info@shn-engr.com **Web:** shn-engr.com
1062 G Street, Suite I, Arcata, CA 95521-5800

Reference: 021170

March 25, 2022

Wildlife Habitat Assessment
Annie and Mary Trail
Sunset Avenue to Humboldt Bay Municipal Water District Park 1

Introduction

The project consists of the development of a trail system through the City of Arcata from Sunset Avenue to the Humboldt Bay Municipal Water District Park 1 along the Mad River on the existing railroad right-of-way (ROW). The following are the results of the wildlife habitat assessment for the proposed Annie and Mary Trail project. The results of this study will be used in the planning and environmental review stages of the trail project so as to minimize or prevent impacts to biological resources within the proposed trail alignment (see Appendix 1, Figure 1).

Existing Conditions

The project area consists of 3.4 miles of railroad ROW. The 2.25 miles of ROW from Sunset Avenue to West End Road contain existing railroad infrastructure that has remained idle for 26 years. Railroad tracks remain in place; however, large portions of the ROW are densely covered in shrub, bramble, or young tree growth reflecting the years since they were last used. Portions of the ROW are narrow linear patches of riparian vegetation between residential, industrial, and roadway development. The northeastern portion of the ROW, parallel to West End Road is positioned between the Mad River riparian corridor and coniferous forest among a rural residential area, which represents the highest quality habitat available to wildlife compared to other portions of the ROW.

Methods

Desktop Review

This assessment includes a review of existing data and information related to special-status species of animals that may be present within the study area (see Appendix 2).

The findings of this report are the result of several sources, including a review of existing literature regarding sensitive biological resources that have the potential to occur within the study area.

Biological scoping included a review of the following sources:

- California Natural Diversity Database (CNDDB) query for Arcata North and surrounding USGS 7.5-minute topographic quadrangles (Tyee City, Trinidad, Crannell, Panther Creek, Blue Lake, Korbel, Arcata South, and Eureka; California Department of Fish and Wildlife [CDFW], 2022a).
- Biogeographical Information and Observation System's Rarefind[1] database (BIOS; CDFW, 2022b).
- Special Animals of California List (CDFW, 2022c).
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) was queried for threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of, and/or may be affected by, the proposed project (USFWS, 2022).

Field Investigation

A wildlife observation and habitat survey was conducted by an SHN senior biologist with 23 years of experience. The wildlife habitat assessment was conducted on March 16, 2022, throughout the entire study area. Habitat availability and suitability was determined for each species reported by the databases mentioned above (see Appendix 2, Table 1). Nomenclature for special-status animals conforms to CDFW guidelines (CDFW, 2022c). Wildlife species observed were recorded, including associated habitat characteristics and habitat use behavior (see Appendix 2, Table 2).

Results

Determinations of habitat availability for each animal species are presented in Appendix 2, Table 1. The northeastern section of the study area between the Mad River to the north and coniferous forest to the south represents the best available wildlife habitat. The remainder of the ROW is largely restricted between industrial, residential, and roadway development. Three special-status wildlife species were present within or adjacent to the study area. Black-capped chickadee and Great Egret were both observed foraging within the ROW. Osprey was observed on a nest approximately 475 feet southeast of the northeastern end of the study area (see Appendix 1, Figure 1). In addition, 19 other wildlife species have a moderate or high potential to occur within or immediately adjacent to at least portions of the study area (see Appendix 2, Table 1). The majority of the study area has potential for nesting migratory bird habitat and for use as a wildlife movement corridor. According to the previously prepared Wetlands Constraints Assessment Update (SHN, 2022), there are six streams that occur within the ROW. A majority of these streams are not expected to have suitable connectivity or spawning substrate for salmonid fish species on account of high gradients, culverts and other urban development bisecting these streams. Janes Creek and South Fork Janes Creek (Class I) may have potential to support connectivity for fish (SHN, 2022, Figures 4 and 5).

[1] Rarefind is a "positive detection" database. The absence of data does not imply absence of special-status species.

Please call me at 707-822-5785 if you have any questions.

Sincerely,

SHN

Gretchen O'Brien
Senior Wildlife Biologist

GAO:GCR:ame

Appendices: 1. Figure 1: Study Area and Special-status Species

Observations 2. Special-status species Scoping Tables

c. w/Attach.: Emily Sinkhorn, Environmental Services Director, City of Arcata

References

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SHN. (2022). Wetland Constraints Assessment Update, Annie and Mary Trail, Sunset Avenue to Humboldt Bay Municipal Water District Park 1. March 2022.

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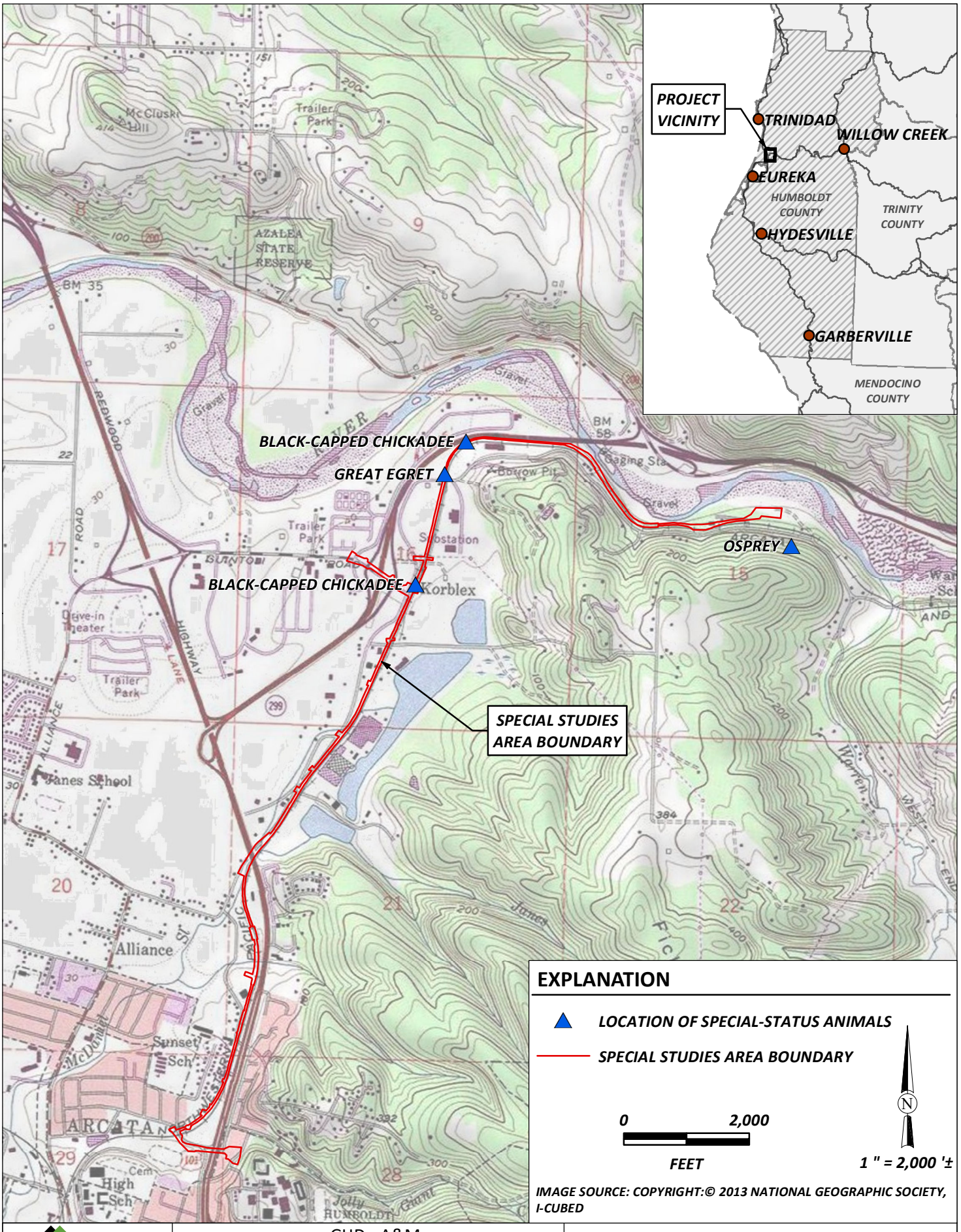
Figure 1: Study Area and Special-status Species Observations

1



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GHD - A&M
Wildlife Habitat Assessment
Arcata, Humboldt County, California

Annie & Mary Trail Project Study Area and Special-status Animal Observations
SHN 021170

March 2022 | BIO_Fig1_SpecialStatusAnimals | Figure 1

Special-status Species Scoping Tables

2

Table 1. Special-Status Animal Scoping List. CNDDB, RareFind, IPaC March 2022
Annie and Mary Trail Project

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
AMPHIBIANS									
Ascaphus truei	Pacific tailed frog	None	None	SSC	G4	S3S4	Occurs in montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine, and riparian forest habitats.	Restricted to perennial montane streams. Tadpoles require water below 15 degrees Celsius.	None. There are no streams with suitable habitat on site.
Plethodon elongatus	Del Norte salamander	None	None	WL	G4	S3	Old-growth associated species with optimum conditions in the mixed conifer/hardwood ancient forest ecosystem.	Cool, moist, stable microclimate, a deep litter layer, closed multi-storied canopy, dominated by large, old trees.	Low. The study area contains very minimal and patchy habitat in the eastern portion of the study area for this species, though adjacent habitat may be suitable.
Rana aurora	northern red-legged frog	None	None	SSC, S	G4	S3	Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover.	Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	High. Standing and slow-moving water in the eastern portion of the study area provides suitable habitat.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Rana boylii	foothill yellow-legged frog	None	E (excluding North Coast Clade)	SSC, S	G3	S3	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	High. This species is known to occur in the Mad River adjacent to the eastern portion of the study area and may disperse into the study area during the non-breeding season.
Rhyacotriton variegatus	southern torrent salamander	None	None	SSC, S	G3G4	S2S3	Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest.	Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water.	Low. There is one stream with suitable habitat on site at the eastern end of the study area although the surrounding.
BIRDS									
Accipiter cooperii	Cooper's hawk	None	None	WL	G5	S4	Woodland, riparian or coniferous forest, chiefly of open, interrupted or marginal type.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	High. Suitable habitat exists for this species throughout several portions of the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Accipiter striatus	sharp-shinned hawk	None	None	WL	G5	S4	Forest and forest edge, and are not found where trees are scarce or scattered, except on migration. Sometimes suburban areas.	They require dense forest, ideally with a closed canopy, for breeding.	Moderate. Suitable habitat exists within and immediately adjacent to the eastern portion of the study area.
Ardea alba	great egret	None	None	SSC	G5	S4	Marshes, estuaries, wetlands, riparian forest. Colonial nester in large trees.	Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Present. Suitable habitat exists within and immediately adjacent the study area, primarily in the eastern portion.
Ardea herodias	great blue heron	None	None	SSC	G5	S4	Marshes, estuaries, wetlands, riparian forest. Colonial nester in tall trees, cliffsides, and sequestered spots on marshes.	Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Moderate. Suitable habitat exists within and immediately adjacent to the study area, primarily in the eastern portion.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Asio flammeus	short-eared owl	None	None	SSC	G5	S3	Large, open areas with low vegetation, including prairie and coastal grasslands, heathlands, meadows, shrubsteppe, savanna, tundra, marshes, dunes, and agricultural areas.	Short-eared owls nest on the ground amid grasses and low plants.	Low. Suitable foraging habitat may exist within the meadow/grasslands in the study area.
Botaurus lentiginosus	American bittern	None	None	None	G5	S3S4	Wetlands, marshes, tall grasslands.	breed in freshwater marshes with tall vegetation.	Low. Small, isolated patches of suitable habitat exist within the study area although surrounded by industrial development.
Brachyramphus marmoratus	marbled murrelet	T	E	None	G3	S2	Open ocean, coastal forests, talus slopes, cliffs.	Nests in moist coastal coniferous forests, usually within a few miles of the ocean and especially in old-growth forests	None. There is no suitable habitat within or immediately adjacent to the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Cerorhinca monocerata	rhinoceros auklet	None	None	WL	G5	S3	Off-shore islands and rocks along the California coast.	Nests in a burrow on undisturbed, forested and unforested islands, and probably in cliff caves on the mainland.	None. There is no suitable habitat within or immediately adjacent to the study area.
Chaetura vauxi	Vaux's swift	None	None	SSC	G5	S2S3	Mature and old-growth coniferous and mixed forests. Nonbreeding birds use tree hollows or chimneys, roosting communally.	Nest are built in hollows of live or dead large trees, usually coniferous trees, and much less often in chimneys or under rooflines	Moderate. Suitable habitat exists within and immediately adjacent to the study area, primarily in the eastern and northern portion.
Charadrius montanus	mountain plover	None	None	SSC, S	G3	S2S3	Short grasslands in valleys and foothills, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms.	Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	None. There is no suitable habitat within or immediately adjacent to the study area and out of typical range of this species.
Charadrius nivosus nivosus	western snowy plover	T	None	SSC, BCC	G3T3	S2	Sandy beaches, river bars, salt pond levees and shores of large alkali lakes.	Needs sandy, gravelly or friable soils for nesting.	None. There is no suitable habitat within the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Circus hudsonius	northern harrier	None	None	SSC	G5	S3	Coastal salt and freshwater marsh, coastal scrub. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas.	Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Low. Suitable habitat exists within the eastern end f the study area, though isolated from typical habitat areas.
Coccyzus americanus	Yellow-billed cuckoo	T	E	S	G5T2T3	S1	Wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.	Nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites.	None. There is no suitable habitat within the study area.
Contopus cooperi	olive-sided flycatcher	None	None	SSC	G4	S3	Western coniferous forest, meadows, rivers and streams, partially logged areas, recent burns, beaver ponds, bogs, and muskegs.	Nest in openings or edges in the forest.	Moderate. Suitable habitat exists within and adjacent to the study area, primarily in the eastern portion.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Coturnicops noveboracensis	yellow rail	None	None	SSC, S, BCC	G4	S1S2	Freshwater marshes, meadows, and seeps. Summer resident in eastern Sierra Nevada in Mono County.	Freshwater marshlands.	None. No suitable habitat exists within the study area and it is outside the typical range of this species.
Egretta thula	snowy egret	None	None	None	G5	S4	Marshes, meadows and seeps, riparian forest. Colonial nester, with nest sites situated in protected beds of dense tules.	Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Low. Suitable habitat exists immediately adjacent to a small section of the study area in the eastern portion.
Elanus leucurus	white-tailed kite	None	None	FP, S	G5	S3S4	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Moderate. Suitable habitat exists within portions of the study area and immediately adjacent.
Empidonax traillii	willow flycatcher	None	E	None	G5	S1S2	Riparian, woodland edges, scrubby areas.	Willows and other shrubs near standing or running water.	Low. Suitable habitat may exist immeditely adjacent to the study area in the eastern portion along the Mad River.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Falco columbarius	merlin	None	None	WL	G5	S3S4	Open and semiopen areas, coastal areas and along rivers	Nests in shrubs and trees along rivers and in small groves of deciduous trees planted as wind breaks	Moderate. Suitable habitat exists within and immediately adjacent to the study area, particularly in the eastern portion.
Falco peregrinus anatum	American peregrine falcon	D	D	FP	G4T4	S3S4	Open habitat, along barrier islands, mudflats, coastlines, lake edges, and mountain chains.	Open landscapes with cliffs (or skyscrapers) for nest sites	Moderate. Foraging habitat exists within and immediately adjacent to the study area, particularly in the eastern portion, though nesting habitat is not present.
Fratercula cirrhata	tufted puffin	None	None	SSC	G5	S1S2	Open-ocean bird; nests along the coast on islands, islets, or (rarely) mainland cliffs.	Requires sod or earth into which the birds can burrow, on island cliffs or grassy island slopes.	None. There is no suitable habitat within the study area and outside the coastal/oceanic range of this species.
Haliaeetus leucocephalus	bald eagle	D	E	FP, S, BCC	G5	S3	Mature coniferous forest. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water.	Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Moderate. No suitable habitat exists within the study area. However, suitable foraging and nesting habitat may exist immediaely adjacent to the eastern portion.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Hydrobates furcatus	fork-tailed storm-petrel	None	None	SSC, S	G5	S1	Colonial nester on small, offshore islets. Forages over the open ocean, usually well off-shore.	Birds choose offshore islets which provide nesting crannies beneath rocks or sod for burrowing.	None. There is no suitable habitat within the study area and outside the oceanic range of this species.
Icteria virens	yellow-breasted chat	None	None	SSC	G5	S3	Dense shrubbery, including abandoned farm fields, clearcuts, powerline corridors, fencerows, forest edges and openings, swamps, and edges of streams and ponds.	Low, dense vegetation, often including blackberry bushes.	High. Suitable habitat exists for this species throughout several portions of the study area.
Nannopterum auritum	double-crested cormorant	None	None	WL	G5	S4	Riparian forest and scrub. Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state.	Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Low. There is no suitable habitat within the study area, although foraging habitat exists immediately adjacent along the Mad River in the eastern portion.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Numenius americanus	long-billed curlew	None	None	WL	G5	S2	Shorelines, wetlands, tidal estuaries, mudflats, flooded fields	Breed in sparse, short grasses, including shortgrass and mixed-grass prairies as well as agricultural fields	None. There is no suitable habitat within or immediately adjacent to the study area.
Nycticorax nycticorax	black-crowned night heron	None	None	None	G5	S4	Marshes, wetlands, riparian forest. Colonial nester, usually in trees, occasionally in tule patches.	Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Moderate. Suitable habitat exists in isolated patches within and adjacent to the study area, primarily in the eastern portion.
Pandion haliaetus	osprey	None	None	S, WL	G5	S4	Riparian forest, ocean shore, bays, freshwater lakes, and larger streams.	Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Present. Suitable nesting habitat exists to the south and east of the eastern portion of the study area. An existing nest is present approximately 475 feet to the southeast of the eastern end of the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	None	SSC	G5T2T3	S2S3	Live in 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.	Moderate. Suitable habitat exists within the grassland portions of the study area and immediately adjacent.
Pelecanus occidentalis californicus	California brown pelican	D	D	FP	G4T3T4	S3	Colonial nester on coastal islands just outside the surf line.	Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	None. There is no suitable habitat within the study area and outside the coastal/oceanic range of this species.
Poecile atricapillus	black-capped chickadee	None	None	WL	G5	S3	Chickadees are found in deciduous and mixed forests, open woods, parks, willow thickets, cottonwood groves, and disturbed areas.	Nests in cavities.	Present. Suitable habitat exists within several portions of the study area. This species was present in the northern and eastern portions.
Ptychoramphus aleuticus	Cassin's auklet	None	None	SSC	G4	S2S4	Pelagic	Nests in burrows on offshore islands.	None. There is no suitable habitat within the study area and outside the oceanic range of this species.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Rallus obsoletus obsoletus	California Ridgway's rail	E	E	FP	G3T1	S1	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	Associated with abundant growths of pickleweed but feeds away from cover on invertebrates from mud-bottomed sloughs.	None. There is no suitable habitat within or immediately adjacent to the study area and out of typical range of this species.
Riparia riparia	bank swallow	None	T	S	G5	S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert.	Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	None. There is no suitable habitat within or immediately adjacent to the study area.
Strix occidentalis caurina	Northern Spotted Owl	T	T	None	G3G4T3	S3	Mature coniferous forest.	Nests in tree cavities or broken off tops of trees in dense section of old forest, well protected from open sky by a dense tree canopy. This species can travel over a mile from the nest site for foraging.	Low. Suitable foraging and dispersal habitat may exist within and immediately adjacent to the study area in the eastern portion, though no suitable nesting habitat exists.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
FISH									
Acipenser medirostris pop. 1	green sturgeon - southern DPS	T	None	VU, SSC, SC	G3T1	S1	Northern California shore and tributaries, Sacramento/San Joaquin flowing waters. Known in Humboldt bay	These are the most marine species of sturgeon. Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	None. There is no suitable habitat within the study area.
Acipenser medirostris pop. 2	green sturgeon - northern DPS	None	None	VU, SSC, SC	G3TNR	S1	Klamath/North coast flowing waters. Abundance increases northward of Point Conception. Spawns in the Klamath and Trinity Rivers.	These are the most marine species of sturgeon. Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	None. There is no suitable habitat within the study area.
Acipenser transmontanus	white sturgeon	None	None	SSC	G4	S2	Large rivers and their tributaries. Gulf of Alaska to Monterey	Estuaries to rivers and streams.	None. There is no suitable habitat within the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Entosphenus tridentatus	Pacific lamprey	None	None	VU, S, SSC	G4	S3	Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining.	Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	Moderate. Suitable habitat and connectivity exists within few, isolated locations of the study area.
Eucyclogobius newberryi	tidewater goby	E	None	VU	G3	S3	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River.	Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	None. There is no suitable habitat within or immediately adjacent to the study area.
Lampetra richardsoni	western brook lamprey	None	None	SSC, S	G4G5	S3S4	Freshwater coastal waterways of the western United States and Canada.	Large coastal rivers and their tributaries.	Moderate. Suitable habitat and connectivity exists within few, isolated locations of the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Oncorhynchus clarkii clarkii	coast cutthroat trout	None	None	VU, SSC, S	G5T4	S3	Small coastal streams from the Eel River to the Oregon border.	Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning.	Low. Suitable habitat and connectivity is minimal within the study area.
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	T	T	None	G5T2Q	S2	Small coastal streams, as well as larger rivers, such as the Klamath River system, where they are currently found as far upstream as Iron Gate Dam and the Shasta River.	Low-gradient, shaded, gravel-bottom streams	Low. Suitable habitat and connectivity is minimal within the study area.
Oncorhynchus mykiss irideus pop. 16	steelhead - northern California DPS	T	None	None	G5T2T3Q	S2S3	Coastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead.	Streams that are accessible to the ocean with sufficient flows and cool water.	Low. Suitable habitat and connectivity is minimal within the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	None	CE	SSC	G5T4Q	S2	No. Calif coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS and No. Calif DPS.	Cool, swift, shallow water and clean loose gravel for spawning, and suitably large pools in which to spend the summer.	Low. Suitable habitat and connectivity is minimal within the study area.
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	T	None	None	G52Q	S2	South of the Klamath River to and including the Russian River.	Main stems and large tributaries.	None. Suitable habitat and connectivity does not exist within the study area.
Oncorhynchus tshawytscha pop. 30	chinook salmon - upper Klamath and Trinity Rivers ESU	C	CE	SSC	G5T3Q	S2	Aquatic, upper Klamath and Trinity Rivers.	Below natural and manmade impassable barriers. Cool, fast flowing water, deep with course gravel.	None. The study area is outside this range of this ESU. Suitable habitat and connectivity does not exist within the study area.
Spirinchus thaleichthys	longfin smelt	C	T	None	G5	S1	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.	Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	None. There is no suitable habitat within or adjacent to the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Thaleichthys pacificus	eulachon	T	None	None	G5	S2	Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries.	Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	Low. Suitable habitat and connectivity is minimal within the study area.
INSECTS									
Bombus caliginosus	obscure bumble bee	None	None	VU	G4?	S1S2	Coastal areas from Santa Barbara County to north to Washington state.	Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	Low. There is minimal suitable habitat within the study area.
Bombus crotchii	Crotch bumble bee	None	None	None	G3G4	S1S2	Coastal California east to the Sierra-Cascade crest and south into Mexico.	Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	Low. There is minimal suitable habitat within the study area.
Bombus occidentalis	western bumble bee	None	None	S	G2G3	S1	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Flowering grasslands	Low. There is minimal suitable habitat within the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Cicindela hirticollis gravida	sandy beach tiger beetle	None	None	None	G5T2	S2	Coastal dunes. Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico.	Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	None. There is no suitable habitat within the study area.
Danaus plexippus	Monarch butterfly	C	None	None	-	-	Fields, roadside areas, open areas, wet areas or urban garden.,	Milkweed and other flowering plants. They only lay eggs on milkweed.	Moderate. There is suitable foraging and resting habitat within the study area.
Scaphinotus behrensi	Behrens' snail-eating beetle	None	None	None	G2G4	S2S4	North coast coniferous forest.	Found in extreme NW CA along the coast.	None. There is no suitable habitat within the study area and outside the typical range of this species.
MAMMALS									
Aplodontia rufa humboldtiana	Humboldt mountain beaver	None	None	None	G5TNR	SNR	Coastal scrub and riparian forest. Coast Range in southwestern Del Norte County and northwestern Humboldt County.	Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory.	None. There is no suitable habitat within the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Arborimus albipes	white-footed vole	None	None	SSC	G3G4	S2	Mature coastal forests in Humboldt and Del Norte counties. Prefers areas near small, clear streams with dense alder and shrubs.	Occupies the habitat from the ground surface to the canopy. Feeds in all layers and nests on the ground under logs or rock.	None. There is no suitable habitat within the study area.
Arborimus pomo	Sonoma tree vole	None	None	SSC	G3	S3	North coast fog belt from Oregon border to Somona County. In Douglas-fir, redwood and montane hardwood-conifer forests.	Feeds almost exclusively on Douglas-fir needles. Will occasionaly take needles of grand fir, hemlock or spruce.	Low. There is minimal suitable habitat within the study area, some immediately adjacent, primarily in the eastern portion.
Corynorhinus townsendii	Townsend's big-eared bat	None	None	SSC, S	G4	S2	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	None. There is no suitable habitat within the study area and human disturbance is present throughout.
Enhydra lutris nereis	southern sea otter	T	None	FP	G4T2	S2	Coastal waters San Mateo County to Santa Barbara County.	Coastal bays with seegrass beds.	None. There is no suitable habitat within the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Erethizon dorsatum	North American porcupine	None	None	None	G5	S3	Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges.	Wide variety of coniferous and mixed woodland habitat.	None. There is no suitable habitat within the study area.
Eumetopias jubatus	Steller sea lion	Delisted	None	SSC	G3	S2	Breeds on Ano Nuevo, San Miguel and Farallon islands, Point St. George, and Sugarloaf. Hauls-out on islands and rocks.	Needs haul-out and breeding sites with unrestricted access to water, near aquatic food supply and with no human disturbance.	None. There is no suitable habitat within the study area and outside the oceanic range of this species.
Lasiurus cinereus	hoary bat	None	None	None	G3G4	S4	Dense forests, open forested glades, edges of forest clearings, coniferous forests, deserts, tropical forests and broadleaf forests.	Solitary roosting in trees particularly in border clearings.	Moderate. There is suitable roosting habitat within portions of the study aea, primarily in the eastern portion.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
Martes caurina	Pacific marten coastal DPS (Humboldy Marten)	T	E	SSC, S	G4G5T3	S1	Typically associated with closed-canopy, late-successional, mesic coniferous forests with complex physical structure near the ground.	Den in lower branches of living trees, tree boles in stages of decay, coarse woody debris, shrubs, and rockfields.	None. There is no suitable habitat within the study area.
Myotis evotis	long-eared myotis	None	None	S	G5	S3	Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands and forests.	Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.	Moderate. There is suitable roosting habitat within portions of the study area, primarily in the eastern portion.
Pekania pennanti	Fisher	None	None	SSC, S	G5	S2S3	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure.	Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	None. There is no suitable habitat within the study area.

Scientific Name	Common Name	Federal Status	State Status	Other Status	Global Rank	State Rank	General Habitat	Specific Habitat	Potential to Occur
MOLLUSKS									
Anodonta californiensis	California floater	None	None	S	G3Q	S2?	Freshwater lakes and slow-moving streams and rivers. Taxonomy under review by specialists.	Generally in shallow water.	None. There is no suitable habitat within the study area.
Littorina subrotundata	Newcomb's littorine snail	None	None	None	G5	S1S2	Marine aquatic.	Humboldt Bay to Gulf of Alaska.	None. There is no suitable habitat within the study area.
Margaritifera falcata	western pearlshell	None	None	None	G4G5	S1S2	Aquatic.	Prefers lower velocity waters.	Low. There is minimal suitable habitat within the study area.
Emys marmorata	western pond turtle	None	None	SSC, VU, S	G3G4	S3	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.	Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Moderate. There is minimal suitable habitat within the study area, and suitable habitat immediately adjacent to the eastern portion of the study area.

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW)

C: candidate

CT: candidate threatened

D: delisted

DPS: distinct population segment

E: endangered

S: sensitive

SSC: species of special concern

T: threatened

VU: vulnerable

ESU: evolutionarily significant unit WL: watch list

FP: fully protected

2. Species Heritage rank as assigned by California Department of Fish and Wildlife (CDFW)

G1/S1: critically imperiled	SNR: State No Ranking
G2/S2: imperiled	TNR: Subspecies No Ranking
G3/S3: vulnerable	T: Referring to a subspecies
G4/S4: apparently secure	Q: Taxonomic questions associated with this species
G5/S5: secure	

Table 2. Observed Species
Annie & Mary Trail Project Study Area March 16, 2022

Scientific Name	Common Name	Notes
Agelaius phoeniceus	Red-winged blackbird	Outside study area in patch of cattails
Ardea alba	Great egret	Within the study area foraging on the ground near a stormwater drainage
Ariolimax sp.	Banana slug	Observed within the study area
Buteo lineatus	Red-shouldered hawk	Fly-over
Calypte anna	Anna's hummingbird	Foraging within the study area
Chamaea fasciata	Wrentit	Heard within the study area
Colaptes auratus	Northern flicker	Heard within the study area
Corthylio calendula	Ruby-crowned Kinglet	Observed within the study area
Corvus brachyrhynchos	American crow	Observed within the study area
Corvus corax	Common raven	Fly-over
Dryobates villosus	Hairy woodpecker	Observed within the study area near trees with several cavities
Pandion haliaetus	Osprey	Outside study area on nest
Pipilo maculatus	Spotted towhee	Observed within the study area
Poecile atricapillus	Black-capped chickadee	Foraging within the study area, cavities for potential nesting available
Poecile rufescens	Chestnut-backed chickadee	Foraging within the study area
Pseudacris regilla	Northern Pacific treefrog	Within the study area in standing water
Regulus satrapa	Golden-crowned kinglet	Heard within the study area
Sayornis nigricans	Black phoebe	Observed within the study area
Spinus tristis	American goldfinch	Heard within the study area
Sturnus vulgaris	European starling	Observed within the study area
Tachycineta bicolor	Tree swallow	Observed within the study area
Thryomanes bewickii	Bewick's wren	Heard within the study area
Troglodytes pacificus	Pacific wren	Heard within the study area
Turdus migratorius	American robin	Heard within the study area
Zonotrichia atricapilla	Golden-crowned sparrow	Observed within the study area
Zonotrichia leucophrys	White-crowned sparrow	Observed within the study area

Appendix E

Botanical Report

Botanical Report

Annie & Mary Trail
Arcata, California

Prepared for:
GHD Inc

September 2022

021170.100

Phone: (707) 822-5785 **Email:** info@shn-engr.com
Web: shn-engr.com • 1062 G Street, Suite, Arcata, CA 95521

Botanical Report

Annie & Mary Trail
Arcata, California

Prepared for:
GHD Inc

Prepared by:

1062 G Street, Suite I
Arcata, CA 95521
707-822-5785

September 2022

QA/QC:JLS
Reference: 021170.100

Table of Contents

Appendices

List of Illustrations

Figures **Follows Page**

Abbreviations and Acronyms

BIOS	Biogeographical Information and Observation System
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
E	Endangered
FESA	Federal Endangered Species Act
G1/S1	Critically Imperiled Species Heritage Rank
G2/S2	Imperiled Species Heritage Rank
G3/S3	Vulnerable Species Heritage Rank
G4/S4	Apparently Secure Species Heritage Rank
G5/S5	Secure Species Heritage Rank
IPaC	Information for Planning and Conservation
ROW	right-of-way
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey

Introduction

This botanical report has been prepared on behalf of the City of Arcata for the planning and permitting of Phase 1 of the Arcata Annie and Mary Trail Connectivity Project, a proposed multi-use trail from Sunset Avenue to the Humboldt Bay Municipal Water District Park 1 (see Figure 1) within the City of Arcata and adjacent unincorporated lands, Humboldt County, California. This report is intended to be a summary of findings for botanical surveys and sensitive vegetation community characterization, and mapping conducted by SHN on May 16, May 19, July 11, and July 12, 2022, within the right-of-way (ROW) for the proposed multi-use trail.

The results and information contained within this report are intended to help guide trail placement selection and planning level design, as well as to help project planners evaluate potential impacts to biological resources within the proposed alignment, by identifying sensitive biological resources (botanical and sensitive vegetation communities) present within the proposed alignment.

This report also includes recommendations that may be utilized to minimize impacts to sensitive biological resources present within the proposed alignment, including suitable work windows, setbacks, and avoidance and minimization measures.

Site Conditions

The project area is a linear 3.4 miles of railroad ROW covering approximately 26.76 acres (See Figures 2 – 12). The 2.25 miles of ROW from Sunset Avenue to West End Road contain existing railroad infrastructure that has remained idle for 26 years. Railroad tracks remain in place; however, large portions of the ROW are densely covered in shrub, bramble, or young tree growth, reflecting the years since they were last used (Appendix 1; Photos 2 and 5). Portions of the ROW contain narrow linear patches of riparian vegetation between residential, industrial, and roadway development. Soils consist of highly compacted gravel from the railbed and other compacted urban soils. The 1.15 miles of the study area northwest of West End Road are much more naturalized and railroad tracks are no longer in place. Natural vegetation communities are present along the banks of the Mad River and although the railbed and slope cut remains, dense vegetation growth occurs within much of the ROW.

Methods

Prior to conducting fieldwork, the following references were reviewed:

- California Natural Diversity Database (CNDDB) query for Arcata North and surrounding United States Geological Survey (USGS) 7.5-minute topographic quadrangles (Tyee City, Trinidad, Crannell, Panther Creek, Blue Lake, Korbel, Arcata South, and Eureka; California Department of Fish and Wildlife [CDFW], 2022a).
- Electronic Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society [CNPS], 2022a) query for a list of all biological species reported for the Blue Lake and the surrounding USGS 7.5-minute topographic quadrangles.
- United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC; USFWS: IPaC, 2022).
- Biogeographical Information and Observation System (CDFW: BIOS, 2022b).

ALLIANCE RD.

ARCATA HIGH SCHOOL

FOSTER AVE.

SUNSET AVE.

SPEAR AVE.

HIGHWAY 101

HIGHWAY 299

VALLEY WEST

GIUNTOLI LN.

MAD RIVER

H ST.

ST. LOUIS RD.

L.K. WOOD BLVD.

WEST END RD.

DETAIL ON SHEET 8

DETAIL ON SHEET 2

CAL POLY HUMBOLDT

CALIFORNIA ST.

ALDERGROVE RD.

HIGHWAY 299

2

3

4

5

6

7

8

9

10

11

12

EXPLANATION

STUDY AREA

SHEET INDEX

N

0 1,000

1" = 1,000'

PHOTO SOURCE: USGS NAIP, 2020

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City of Arcata - Annie Mary Trail
Botanical Report
Arcata, California

Project Overview / Sheet Index

SHN 021170.100

September 2022 | BR_Fig1_ProjectOverview | Figure 1

ARCATA HIGH SCHOOL

JAY ST.

SKATE PARK

LARSON PARK

EYE ST.

TODD CT.

SUNSET AVE.

HIGHWAY 101

L.K. WOOD BLVD.

SMALL FRUITED BULRUSH MARSH

SEE DETAIL

DETAIL

EXPLANATION

- POTENTIAL WETLAND
- URBAN/LANDSCAPED
- RUDERAL/NON-NATIVE DOMINANT
- SMALL FRUITED BULRUSH MARSH
- WETLAND BUFFER (100 FT)
- CULVERT
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

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SHN	City of Arcata - Annie Mary Trail Botanical Report Arcata, California	Sunset Ave. to Todd Ct. SHN 021170.100
	September 2022 | BR_Fig2_SunsetAveToToddCt	Figure 2

EXPLANATION

- POTENTIAL WETLAND
- INDICATES SENSITIVE VEGETATION COMMUNITY
- SMALL FRUITED BULRUSH MARSH
- RUDERAL/NON-NATIVE DOMINANT
- URBAN/LANDSCAPED
- PLANTED CONIFER STAND
- RIPARIAN RED ALDER FOREST
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1 " = 100 '±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

CRAFTSMAN'S MALL

ST. LOUIS RD.

NOT WALKED (NO ACCESS)

MAD RIVER LUMBER

SMALL FRUITED BULRUSH MARSH

HIGHWAY 101

L.K. WOOD BLVD.

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SHN	City of Arcata - Annie Mary Trail Botanical Report Arcata, California	Todd Ct. to St. Louis Rd. SHN 021170.100
	September 2022 | BR_Fig3_ToddCtToStLouisRd	Figure 3

EXPLANATION

- POTENTIAL WETLAND
- INDICATES SENSITIVE VEGETATION COMMUNITIES
- UPLAND RED ALDER
- RUDERAL/NON-NATIVE DOMINANT
- PLANTED CONIFER STAND
- RIPARIAN RED ALDER FOREST
- COAST WILLOW THICKET
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

ST. LOUIS RD.

STREAM 3
(JANES CREEK)

WEST END RD.

HIGHWAY 101

NOT WALKED
(NO ACCESS)

STREAM 1

L.K. WOOD BLVD.

\\eureka\P-Projects\Eureka\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\BR\ USER: pix4d DATE: 8/31/22, 12:29PM

SHN	City of Arcata - Annie Mary Trail Botanical Report Arcata, California	St. Louis Rd. to West End Rd. SHN 021170.100
	August 2022	BR_Fig4_StLouisRdToWestEndRd
		Figure 4

HIGHWAY 101

WEST END CT.

STREAM 3
(JANES CREEK)

STREAM 2

WEST END RD.

ALVES
INC.

EXPLANATION

- POTENTIAL WETLAND
- INDICATES SENSITIVE VEGETATION COMMUNITIES
- UPLAND RED ALDER
- RUDERAL/NON-NATIVE DOMINANT
- URBAN/LANDSCAPED
- PLANTED CONIFER STAND
- RIPARIAN RED ALDER FOREST
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

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City of Arcata - Annie Mary Trail
Botanical Report
Arcata, California

West End Rd. to Alves Inc.

SHN 021170.100

August 2022 | BR_Fig5_WestEndRdToAlves | Figure 5

STREAM 3
(JANES CREEK)

BETTENDORF
TRUCKING

WEST END RD.

ALVES
INC.

EXPLANATION

- POTENTIAL WETLAND
- INDICATES SENSITIVE VEGETATION COMMUNITIES
- RUDERAL/NON-NATIVE DOMINANT
- URBAN/LANDSCAPED
- RIPARIAN RED ALDER FOREST
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

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City of Arcata - Annie Mary Trail
Botanical Report
Arcata, California

Alves Inc. to Bettendorf Trucking

SHN 021170.100

August 2022 | BR_Fig6_AlvesToBettendorf | Figure 6

THE MILL YARD

NORTHCOAST FABRICATORS

HIGHWAY 299

WEST END RD.

ALDER GROVE RD.

RENNER PETROLEUM

CREEK 3 (JANES CREEK)

ARCATA FOREST PRODUCTS

NORTHCOAST AWNING

EXPLANATION

- POTENTIAL WETLAND
- INDICATES SENSITIVE VEGETATION COMMUNITIES
- MIXED RIPARIAN (RED ALDER, PACIFIC WILLOW AND COAST WILLOW CO-DOMINANT)
- COAST WILLOW THICKET
- RUDERAL/NON-NATIVE DOMINANT
- URBAN/LANDSCAPED
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

0 100

1" = 100'±

PHOTO SOURCE: CITY OF ARCATA, 11/2017

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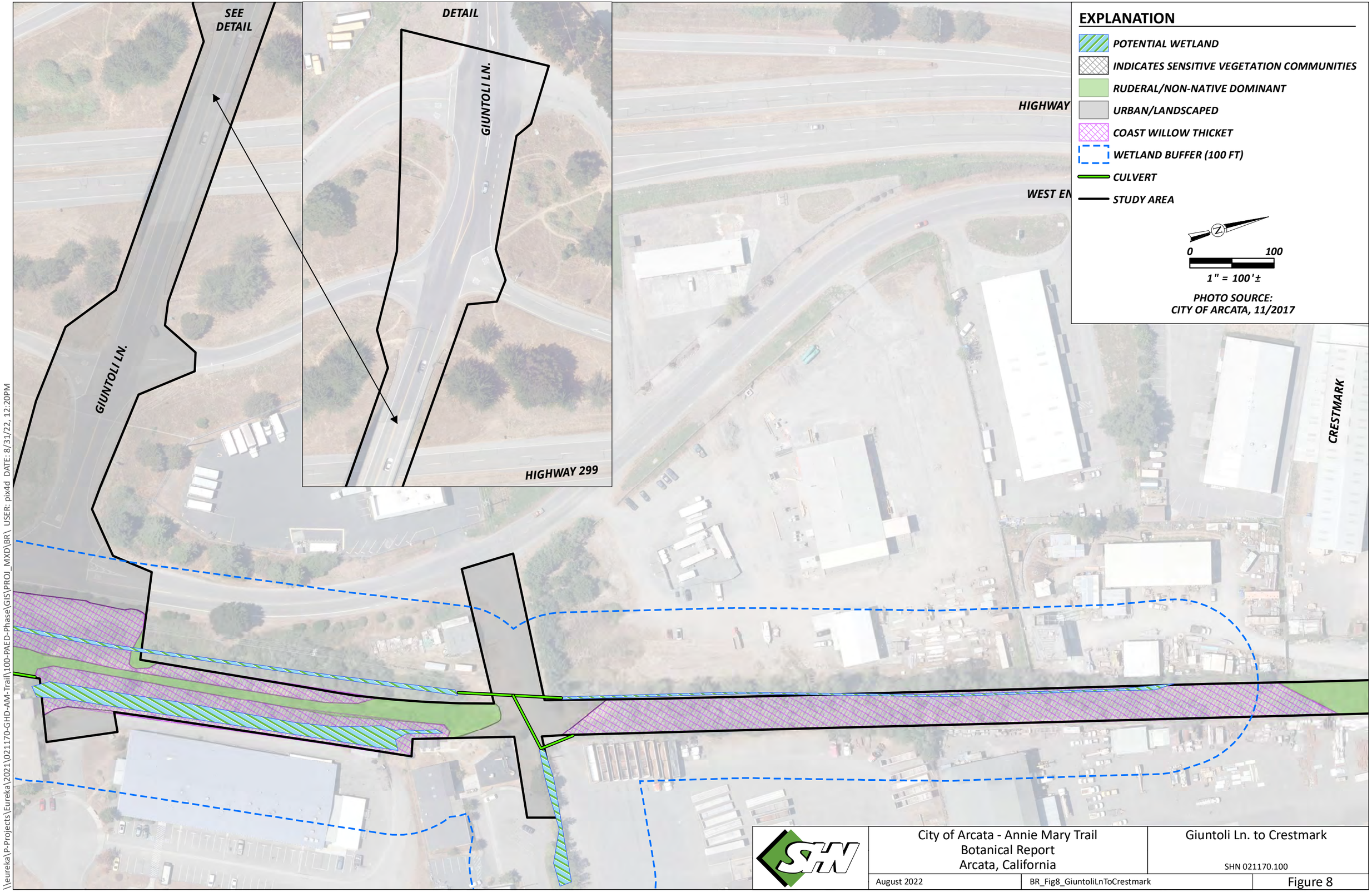
City of Arcata - Annie Mary Trail
Botanical Report
Arcata, California

Northcoast Fabricators to Northcoast Awning
SHN 021170.100

August 2022 | BR_Fig7_NCFabricatorstoNCAwning | Figure 7



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	City of Arcata - Annie Mary Trail Botanical Report Arcata, California	Giuntoli Ln. to Crestmark SHN 021170.100
	August 2022 | BR_Fig8_GiuntoliLnToCrestmark	Figure 8

EXPLANATION

- TEST PIT
- POTENTIAL WETLAND
- RUDERAL/NON-NATIVE DOMINANT
- MANAGED DITCH
- SMALL FRUITED BULRUSH MARSH
- WETLAND BUFFER (100 FT)
- CULVERT
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

HIGHWAY 299

TP1

WES GREEN

WEST END RD.

TP4

SMALL FRUITED BULRUSH MARSH

ERICSON WAY

NORTH
COAST
LABORATORIES

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SHN	City of Arcata - Annie Mary Trail Botanical Report Arcata, California	Ericson Way to Wes Green SHN 021170.100
	September 2022	BR_Fig9_EricsonWayToWesGreen	Figure 9

HIGHWAY 299

WEST END RD.

MAD RIVER

SMALL FRUITED BULRUSH MARSH

PIPELINE RD.

REBECCA LN.

FIGURE 10
FIGURE 11

SMALL FRUITED BULRUSH MARSH

EXPLANATION

- POTENTIAL WETLAND
- INDICATES SENSITIVE VEGETATION COMMUNITIES
- RUDERAL/NON-NATIVE DOMINANT
- SMALL FRUITED BULRUSH MARSH
- SITKA SPRUCE FOREST
- RIPARIAN RED ALDER FOREST
- MANAGED DITCH
- WETLAND BUFFER (100 FT)
- CULVERT
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

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City of Arcata - Annie Mary Trail
Botanical Report
Arcata, California

Wes Green to Rebecca Ln.

SHN 021170.100

September 2022 | BR_Fig10_WesGreenToRebeccaLn | Figure 10

SLOUGH SEDGE SWARD

TP3

TP2

SLOUGH SEDGE SWARD

MAD RIVER

HBMWD

STREAM 4

WEST END RD.

EXPLANATION

- TEST PIT
- INDICATES SENSITIVE VEGETATION COMMUNITY
- SLOUGH SEDGE SWARD
- WETLAND BUFFER (100 FT)
- SITKA SPRUCE FOREST
- RIPARIAN RED ALDER FOREST
- STUDY AREA

N

0 100

1 " = 100 '±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

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SHN	City of Arcata - Annie Mary Trail Botanical Report Arcata, California	Rebecca Ln. to HBMWD SHN 021170.100
	September 2022 | BR_Fig11_RebeccaLnToHBMWD	Figure 11

MAD RIVER

PUMP STATION NO. 1 PARK

PARKING LOT

OHWM

HBMWD

WEST END RD.

STREAM 5

STREAM 6

EXPLANATION

- INDICATES SENSITIVE VEGETATION COMMUNITY
- RUDERAL/NON-NATIVE DOMINANT
- RIPARIAN RED ALDER FOREST
- URBAN/LANDSCAPED
- UPLAND RED ALDER
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1 " = 100 '±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

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SHN	City of Arcata - Annie Mary Trail Botanical Report Arcata, California	HBMWD Pump Station Park No. 1 SHN 021170.100
	September 2022	BR_Fig12_HBMWDPumpStationParkNo1	Figure 12

From the database query, a list of potential target biological species for the study area was compiled and is presented in Table 1, Appendix 2. This table includes all biological species reported by the CNDDB, CNPS, and IPaC within the Arcata North and surrounding quadrangles. An evaluation was conducted for the potential presence or absence of habitat for special-status biological species. The databases were queried for historical and existing occurrences of State- and federally-listed threatened, endangered, and candidate biological species; species proposed for listing; and all biological species listed by the CNPS (2022 Online inventory).

Each species was evaluated for its potential to occur in the study area according to the following criteria:

- None. Species listed as having "none" are those species for which:
    - there is no suitable habitat present in the study area (that is, habitats in the study area are unsuitable for the species requirements [for example, elevation, hydrology, biological community, disturbance regime, etc.]).
- Low. Species listed as having a "low" potential to occur in the study area are those species for which:
    - there is no known record of occurrence in the vicinity, and
    - there is marginal or very limited suitable habitat present within the study area.
- Moderate. Species listed as having a "moderate" potential to occur in the study area are those species for which:
    - there are known records of occurrence in the vicinity, and
    - there is suitable habitat present in the study area.
- High. Species listed as having a "high" potential to occur in the study area are those species for which:
    - there are known records of occurrence in the vicinity (there are many records and/or records in close proximity), and
    - there is highly suitable habitat present in the study area.
- Present. Species listed as "present" in the study area are those species for which:
    - the species was observed in the study area.

Table 1 in Appendix 2 includes all biological species reported from the queries, their preferred habitat, and if there is suitable habitat present within the study area for the species.

A focused botanical survey was conducted pursuant to the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2018). Surveying occurred for 6 hours on May 16 and May 19, 2022. Surveying occurred for 8 hours on July 18 and July 19, 2022. The entire length of the proposed section of trail (3.4 miles) was surveyed.

In addition to surveying for target species, a list of all botanical species encountered was compiled. Plants were identified to the lowest taxonomic level possible to distinguish special-status species from others. A list of observed species is attached as Table 2, Appendix 2. Botanical nomenclature follows *The Jepson Manual, Vascular Plants of California* (Baldwin et al., 2012) and subsequent online revisions.

Sensitive vegetation communities were identified using dominant characteristic plant species and cover percentages, which were grouped according to vegetation community compositions described within the *Manual of California Vegetation* (Sawyer et al., 2009; and subsequent online editions CNPS, 2022b). CDFW's Vegetation Classification and Mapping Program Natural Communities and Sensitive Natural Communities lists were reviewed for vegetation communities that may not be included within the Manual of California Vegetation or which more accurately describe vegetation community composition observed within the study area. Areas meeting specific vegetation community criteria were mapped using aerial imagery and ground surveys to define extent of observable vegetation for canopy cover. Areas that were not definable using aerial imagery, including emergent herbaceous vegetation, were delineated by measuring square footage and distance from an observable fixed position on aerial imagery.

Results

A search of the CNDDB, CNPS rare plant inventory, and IPaC resulted in a total of 69 special-status botanical species reported from within the Arcata North and surrounding quadrangles. A total of 23 special-status botanical species were determined to have a moderate or high potential of occurrence within the study area, based on available habitat, proximity of known populations to the study area and current land use. There are currently no recorded occurrences of botanical species identified by the USFWS as Threatened, Endangered, or Candidate species proposed for listing as either threatened or endangered under the Federal Endangered Species Act (FESA) or associated critical habitat within the project area or area of potential effects (USFWS, 2022).

No special-status species were observed during the 2022 surveys. It is unlikely that special-status species occur within the study area due to the history of use, disturbed nature of the proposed trail alignment, dominance by non-native species, regular maintenance, and continued disturbance and development along the ROW. A total of 143 botanical species were observed within the proposed trail alignment during the survey efforts. Of the 143 species observed, 34 percent were native, reflecting the disturbed and developed nature of the proposed trial alignment. Dominant species in open areas included tall fescue (*Festuca arundinacea*), subterranean clover (*Trifolium subterraneum*), English daisy (*Bellis perennis*), sheep sorrel (*Rumex acetosella*), strawberry clover (*Trifolium fragiferum*), Himalayan blackberry (*Rubus armeniacus*), annual dogtail grass (*Cynosurus echinatus*), crabgrass (*Digitaria sanguinalis*), colonial bentgrass (*Agrostis capillaris*), and creeping bentgrass (*Agrostis stolonifera*), among others. Dominant vegetation in forested and shrub areas included Sitka spruce (*Picea sitchensis*), red alder (*Alnus rubra*), and Hooker's willow (*Salix hookeriana*), among others.

Five sensitive (S1-S3 ranked) natural vegetation communities were observed within or directly adjacent to the proposed trail alignment. The remaining area consisted of common vegetation communities (S4-S5 ranked), or non-native vegetation communities and managed areas. Portions of the ROW with non-native vegetation dominance do not meet the definition of a natural vegetation community and were mapped as ruderal/non-native on Figures 2-12.

Vegetation communities within the study area (Figures 2 -12) included:

- *Alnus rubra* forest alliance (Red alder forest)-G5S4,
- *Alnus rubra* riparian forest (Red alder riparian forest)-G3S2.2,
- *Picea sitchensis* forest alliance (Sitka spruce forest)-G5S2,
- *Scirpus microcarpus* alliance (small-fruited bulrush marsh)-G4S2,

- *Carex obnupta* alliance (slough sedge sward)-G4S3,
- *Gaultheria shallon-Rubus (ursinus)* shrubland alliance (Salal – Berry Brambles)-GNRS4
- *Sequoia sempervirens* alliance (redwood forest and woodland)-G3S3.2
- *Salix hookeriana – Salix sitchensis* Shrubland alliance (Coastal willow thickets)-G4S3
- *Cortaderia jubata alliance* (pampas grass patches)-GNASNA
- *Cytisus socoparius – Genista monspessulana – Conotoneaster* spp. Shrubland Semi-Natural Alliance (broom patches)-GNASNA
- *Rubus armeniacus* Shrubland Semi-Natural Alliance (Himalayan Blackberry Brambles)

These vegetation communities were observed in addition to the early seral mixed woody vegetation areas, mixed herbaceous vegetation, mixed conifer stands, and ruderal species-dominated areas. Five of the eleven vegetation communities observed within the study area are considered sensitive natural communities and will likely require mitigation under CEQA if disturbed. Each of the sensitive vegetation communities are discussed below.

Red alder riparian forest is much more restricted than red alder forest, occurring only along waterways and floodplains of waterways within Northern California. Floods, sedimentation, and erosion are the primary drivers of succession in these riparian forests, although road and bridge development along waterways, in addition to Himalayan blackberry brambles, have further limited this vegetation community. Red alder riparian forest has a rarity ranking of G3S2.2, meaning this vegetation community is vulnerable globally and is threatened statewide. This vegetation community is considered a sensitive natural community and qualifies for consideration under CEQA Guidelines checklist lV(b). Within the study area, this vegetation community was observed in the eastern sections of the project area (Figures 10-12) along streams, as well as along streams within more urban portions of the study area. Red alder riparian forest occurs along the south bank of the Mad River and extends into the study area in places where the ROW is closest to the Mad River. This red alder riparian forest is the highest quality example of this vegetation community within the study area and has a relatively intact, native-dominated understory. Urban streams within the Sunset Avenue to West End Road portion of the study area are more impacted and are lower quality with understory of often dense Himalayan blackberry (*Rubus armeniacus*) and other non-native species (Appendix 1; Photos 4 and 6). Within the study area this vegetation community occupies approximately 188,107 square feet (4.32 acres; Figures 10-12).

Sitka spruce forest is known from bottomlands, upland steep slopes, and seaward bluffs and ravines near the ocean. These forests are characterized by Sitka spruce dominance in the canopy and the shrub layer is sparse to continuous. Sitka spruce forest has a rarity ranking of G5S2, meaning that it is considered secure worldwide but is imperiled statewide due to its limited distribution. This vegetation community is considered a sensitive natural community and qualifies for consideration under CEQA Guidelines checklist lV(b). Within the study area, this vegetation community was predominantly found in the eastern section of the project area between West End Road and Park 1 (Figures 10-12). Coastal redwood (*Sequoia sempervirens*) was present as a co-dominant within these areas, with varied, but typically less cover than Sitka spruce. Understory growth within the Sitka spruce forest occurring in the study area included a variety of native and non-native species, including sword fern (*Polystichum munitum*) and Himalayan blackberry. These areas within the project area were adjacent to existing residential development, roadside edges, and along areas associated with foot traffic. Within the study area this vegetation community occupies approximately 69,628 square feet (1.60 acres; Figures 10-12).

Small-fruited bulrush marsh is known from seasonally flooded marshes, stream sides, and roadside ditches. It can be a common understory component of riparian forests. Soils are often high in organic matter and poorly aerated. Stands are small and restricted to wet, freshwater seeps and swales (Sawyer, 2009). It has a rarity ranking of G4S2, meaning that it is apparently secure worldwide, but is imperiled statewide due to its limited distribution and destruction of habitat. This vegetation community is considered a sensitive natural community and qualifies for consideration under CEQA Guidelines checklist lV(b). Within the study area, this vegetation community was observed in several wetland habitats within and adjacent to the project area. These areas are located throughout the study area, as well as adjacent to the project area in several locations typically in isolated features (Figures 2, 9, and 10; Appendix 1; Photo 3). The small-fruited bulrush marsh throughout the study area is characterized by high cover by small-fruited bulrush, typically above 60% relative cover. Most of these isolated features are surrounded by non-native ruderal species or are adjacent to forested areas associated with Sitka spruce forest or coast willow (*Salix hookeriana*). Within the study area this vegetation community occupies approximately 2,406 square feet (0.06 acres; Figures 2, 9, and 10).

Slough sedge swards are known from seasonally flooded swales in old deflation plains and sand dune complexes, shallowly inundated woods, meadows, roadside ditches, coastal swamps, lakeshores, marshes, and riverbanks. Stands can include a shrub or tree layer, but also include areas with no canopy cover. Stands with slough sedge understories are categorized in the *Alnus rubra*, *Morella californica*, *Picea sitchesis*, *Pinus contorta* ssp. *contorta*, and *Salix hookeriana* alliances (Sawyer, 2009). Slough sedge swards have a rarity ranking of G4S3, meaning that it is apparently secure worldwide, but is vulnerable statewide due to its limited distribution. This vegetation community is considered a sensitive natural community and qualifies for consideration under CEQA Guidelines checklist lV(b). Within the study area, this vegetation community was observed within the eastern portion of the study area as well adjacent to the project area in several locations (Figure 11). These areas were often observed in depressions along compacted existing railbed. These communities were also associated with bare soil and litter. Associated species included reed canary grass (*Phalaris arundinacea*), Himalayan blackberry, and twinberry (*Lonicera involucrata* var. *ledebourii*), among other native and non-native species. Within the study area this vegetation community occupies approximately 1,948 square feet (0.04 acres; Figure 11).

Coastal willow thickets are known from coastal streams, tidal swamps, riparian areas, and areas near the ocean where water stands and seasonally floods. Stands are effective as bank stabilizers when occurring in riparian areas. Stands include shrubs less than eight meters in height and with an intermittent to continuous canopy. Emergent trees may be present at low cover. Coastal willow thickets have a rarity ranking of G4S3, meaning that it is apparently secure worldwide, but is vulnerable statewide due to its limited distribution. This vegetation community is considered a sensitive natural community and qualifies for consideration under CEQA Guidelines checklist lV(b). Within the study area, this vegetation was observed within the middle portion of the study area, as well as adjacent to the project area along riparian areas and alongside compacted railbeds (Figures 4, 7, and 8). These areas often included wetlands associated with streams and drainages. Associated species included coyote brush (*Baccharis pilularis* ssp *consanguinea*), red alder, pampas grass (*Cortaderia jubata*), Himalayan blackberry, Sitka willow (*Salix sitchensis*), pacific willow (*Salix lasiandra* var. *lasiandra*), and arroyo willow (*Salix lasiolepis*). Within the study area this vegetation community occupies approximately 101,028 square feet (2.32 acres; Figures 4, 7, and 8).

In addition to the five sensitive vegetation communities described above, Redwood forest and woodlands were also identified adjacent to the study area. Redwood forest and woodlands are known from raised stream terraces, slopes, and ridges. Stands can include shrub layers that are infrequent or

common and herbaceous layers that are absent or abundant. Within this vegetation community, redwood trees are more than 50% relative cover in the tree canopy or more than 30% relative cover alongside other conifers such as Douglas fir (*Pseudotsuga menziesii*) or containing a lower tier of hardwood trees (Sawyer, 2009). Redwood forests have a rarity ranking of G3S3.2, meaning this vegetation community is vulnerable globally and statewide and is further threatened statewide due to human activities. Stands were identified in multiple areas outside of the study area alongside Sitka spruce forest and riparian red alder forest. Small, isolated stands were also identified within the study area, mid-project area (Figure 3). These stands were adjacent to roadways and trafficked areas associated with compacted railbeds. These stands that occur at the Lewis Road overpass and do not meet the definition of a sensitive vegetation community as they are planted within an urban setting. Non-native species as well as native species were observed within the understory of the redwood forests and included western sword fern, Himalayan blackberry, sweet vernal grass (*Anthoxanthum odoratum*), with pampas grass on the edges and open areas adjacent to the stands. Area calculations are not provided for this vegetation community since it does not occur within the study area.

Conclusion

Potential habitat exists within the study area for 23 special-status botanical species (see Table 1, Appendix 2); however, no special-status botanical species were observed during the botanical surveys within the proposed Annie & Mary trail alignment through the City of Arcata from Sunset Avenue to the Humboldt Bay Municipal Water District Park 1. The north coast region was in a severe drought during the surveys, however normal rainfall amounts within the spring months prior to and containing the surveys likely alleviated the drought's impact on local flora. The disturbed nature of the study area, lack of historic occurrences within the proposed trail alignment, and the negative results from the 2022 survey make it unlikely that special-status biological species occur within the proposed trail alignment.

Five sensitive natural communities ranked S3 or lower, were observed within and adjacent to the project area (Figures 2-12) and the construction of a multi-use trail may impact these vegetation communities. Direct impacts to sensitive vegetation communities would occur in situations where a sensitive vegetation community occurs within or immediately adjacent to the footprint of the proposed multi-use trail. This would likely result in the removal of defining native vegetation, permanent loss of the vegetation community, or fill and grading or other construction activity that would result in the permanent degradation or loss of habitat function of the vegetation community. It is unknown at this time how much of the sensitive vegetation communities will be impacted by construction of the proposed multi-use trail, however direct impacts can be reduced to a less-than-significant level by incorporating the recommendations listed below, specifically through the development of a mitigation monitoring and reporting plan that would assess the area of direct impacts and develop suitable mitigation for these impacts.

Indirect impacts to sensitive vegetation communities will occur during construction activities but will also continue during normal use of the trail. Example indirect effects resulting from the construction of the multi-use trail include temporary incursion into the sensitive vegetation community, temporal loss of habitat, and introduction of invasive species. Indirect effects on sensitive vegetation communities resulting from the use of the trail include regular incursions into the sensitive vegetation communities and associated impacts to vegetation and wildlife. Indirect impacts to sensitive vegetation communities occurring along the proposed multi-use trail alignment can be reduced to less-than-significant levels by incorporating the recommendations below, specifically invasive species removal, timing of work windows, use of temporary construction fencing and installation of permanent wildlife-friendly fencing.

It should be noted that the ROW between Sunset Avenue and West End Road occurs within urban residential and industrial areas. Much of the sensitive vegetation communities within this area are impacted by human encroachment, specifically homeless camps, paths, and garbage. It is unknown at this time if the trail will exacerbate or alleviate these impacts; however, other trail projects within the Humboldt Bay region through sensitive vegetation communities have seen impacts reduced following trail completion with more regular maintenance, patrolling and garbage removal.

The proposed multi-use trail will pass through several of the large, tree-dominated sensitive vegetation communities. It is not anticipated that construction or use of the trail will result in significant direct impacts to these areas if the trail is constructed on the existing railbed and measures are taken to reduce potential incursion into the surrounding forest during construction and during normal use of the trail. The development of a mitigation plan and incorporation of the recommendations below will reduce cumulative impacts to sensitive vegetation communities to a less-than-significant level.

Recommendations

To minimize potential impacts to sensitive vegetation communities as a result of the construction of a multi-use trail, the following recommendations are provided:

Recommended Mitigation Measures:

- Where impacts to sensitive vegetation communities are unavoidable, mitigation will be required at a recommended rate of 1:1 in-kind replacement for low-quality vegetation communities, 2:1 in-kind replacement for moderate-quality vegetation communities, and 3:1 in-kind replacement for high-quality vegetation communities. Low-quality includes vegetation communities with extensive invasive species cover, on-going disturbance and encroachment, or are fragmented with minimal connectivity to other intact habitat. Moderate-quality vegetation communities may have moderate cover by invasive species but have native species dominant, minimal ongoing disturbance, and have connectivity to other intact native habitat. High-quality vegetation communities have native species dominant with minimal invasive species cover, minimal ongoing disturbance, and are an integral component of intact habitat within the project area and surroundings. Impacts, mitigation ratios, and quality of the vegetation communities will be assessed in a mitigation plan to be developed at a later date.

- Enhancement of adjacent in-kind vegetation communities is also suitable mitigation for vegetation community impacts; however, restoration ratios would be higher than replacement ratios (the habitat mitigation package could include both replacement and enhancement). Enhancement activities include invasive species removal, fill or debris removal, species diversity enhancement planting, and vegetation community expansion through additional planting. Suitable mitigation rates will be specified in a mitigation plan to be developed at a later date.

Recommended Best Management Practices:

- Avoid all sensitive vegetation communities as much as is feasible while designing and constructing the multi-use trail project.

- Where trail construction will occur immediately adjacent to sensitive vegetation communities, temporary construction fencing shall be installed between the sensitive vegetation community and construction activities to prevent accidental encroachment or disturbance.

- Ensure fill soils, gravel, and construction equipment are weed-seed free to the extent practicable. Utilize weed-free straw in all soil stabilization activities.

- Install permanent wildlife-friendly fencing, such as split-rail fence, or an equally effective barrier, between the multi-use trail and sensitive vegetation communities, to minimize encroachment into these features during regular use of the trail following completion of construction.

- Use native herbaceous seed mix for revegetation along the edge of the multi-use trail ROW and for any landscaping that is part of the project plan.

- Consider long-term management of invasive species within and adjacent to sensitive vegetation communities as part of routine trail maintenance activities.

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Site Photos 1

Photo 1. Interface of urban and ruderal/non-native dominant vegetation within the southern section of the project area. Looking west.

Photo 2. Railbed vegetation in open area within the southern section of the project area. Looking north.

Photo 3. Drainage ditch between US Highway 101 and railbed, looking southeast. Typical conditions supporting small-fruited bulrush.

Photo 4: Typical conditions along the northern portion of the proposed trail alignment, looking north. Note pampas grass and red alder.

Photo 5: Conditions within the proposed alignment within the southern section of the proposed alignment, looking north. Note Spanish heather, pampas grass, non-native herbaceous vegetation, many transient camps present, and areas with associated trash.

Photo 6: Typical conditions within red alder forests along the project. Note Himalayan blackberry and pampas grass in upland areas along the edges.

Photo 7: Wes Green maintains a constructed ditch for stormwater catchment parallel to US Highway 299 looking east.

Species Lists 2

Special-Status Plant Scoping List. CNDDB, CNPS, IPaC.
Annie and Mary Trail Project
March 2022

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Abronia umbellata var. breviflora	pink sand-verbena	None	None	G4G5T2	S2	1B.1	Jun-Oct	Coastal dunes and coastal strand.	Foredunes and interdunes with sparse cover. Usually the plant closest to the ocean. 0-75 m.	None
Angelica lucida	sea-watch	None	None	G5	S3	4.2	Apr-Sep	Coastal strand, Marshes and swamps	Coastal bluff scrub, coastal dunes, coastal scrub, coastal salt marshes. 0-150 m	Low
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	None	None	G2T2	S2	1B.2	(Apr)Jun-Oct	Coastal dunes, marshes and swamps, coastal scrub.	Mesic sites in dunes or along streams or coastal salt marshes. 0-155 m.	Low
Astragalus rattanii var. rattanii	Rattan's milk-vetch	None	None	G4T4	S4	4.3	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest	Open grassy hillsides, gravelly flats in valleys, and gravel bars of streambeds. 30-825 m.	Moderate
Calamagrostis bolanderi	Bolander's reed grass	None	None	G4	S4	4.2	May-Aug	Bogs and fens, upland forest, coniferous forest, Coastal scrub, Marshes and swamps, Meadows and seeps.	Mesic	Low

Special-Status Plant Scoping List. CNDDB, CNPS, IPaC.
Annie and Mary Trail Project
March 2022

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Cardamine angulata	seaside bittercress	None	None	G4G5	S3	2B.1	(Jan) Mar-Jul	North coast coniferous forest, lower montane coniferous forest.	Wet areas, streambanks. 5-515 m.	Moderate
Carex arcta	northern clustered sedge	None	None	G5	S1	2B.2	Jun-Sep	Bogs and fens, north coast coniferous forest.	Mesic sites. 60-1,405 m.	Low
Carex buxbaumii	Buxbaum's sedge	None	None	G5	S3	4.2	Mar-Aug	Bogs and fens, Marshes and swamps, meadows and seeps	3-3,300m.	Low
Carex lenticularis var. limnophila	lagoon sedge	None	None	G5T5	S1	2B.2	Jun-Aug	Bogs and fens, marshes and swamps, north coast coniferous forest.	Lakeshores, beaches. Often in gravelly substrates. 0-6 m.	Low
Carex leptalea	bristle-stalked sedge	None	None	G5	S1	2B.2	Mar-Jul	Bogs and fens, meadows and seeps, marshes and swamps.	Mostly known from bogs and wet meadows. 3-1,395 m.	Low
Carex lyngbyei	Lyngbye's sedge	None	None	G5	S3	2B.2	Apr-Aug	Marshes and swamps (brackish or freshwater).	0-200 m.	None
Carex praticola	northern meadow sedge	None	None	G5	S2	2B.2	May-Jul	Meadows and seeps.	Moist to wet meadows. 15-3,200 m.	Low

Special-Status Plant Scoping List. CNDDB, CNPS, IPaC.
Annie and Mary Trail Project
March 2022

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Carex viridula ssp. viridula	green yellow sedge	None	None	G5T5	S2	2B.3	(Jun) Jul-Sep (Nov)	Bogs, fens, marshes and swamps (freshwater), north coast coniferous forest.	Mesic sites. 0-1,705 m.	Low
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	None	None	G4T2	S2	1B.2	Apr-Aug	Marshes and swamps.	In coastal saltmarsh with *Spartina, Distichlis, Salicornia, Jaumea*. 0-20 m.	None
Castilleja litoralis	Oregon coast paintbrush	None	None	G3	S3	2B.2	Jun	Coastal bluff scrub, coastal dunes, coastal scrub.	Sandy sites. 5-255 m.	None
Castilleja mendocinensis	Mendocino Coast paintbrush	None	None	G2	S2	1B.2	Apr-Aug	Coastal bluff scrub, coastal scrub, coastal prairie, closed-cone coniferous forest, coastal dunes.	Often on sea bluffs or cliffs in coastal bluff scrub or prairie. 3-70 m.	None
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	None	None	G4?T2	S2	1B.2	Jun-Oct	Coastal salt marsh.	Usually in coastal salt marsh with *Salicornia, Distichlis, Jaumea, Spartina,* etc. 0-115 m.	None
Chrysosplenium glechomifolium	Pacific golden saxifrage	None	None	G5?	S3	4.3	Feb-Jun	North Coast coniferous forest, Riparian forest	Roadsides (sometimes), Seeps (sometimes), Streambanks	Moderate

Special-Status Plant Scoping List. CNDDB, CNPS, IPaC.
Annie and Mary Trail Project
March 2022

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Collinsia corymbosa	round-headed Chinese-houses	None	None	G1	S1	1B.2	Apr-Jun	Coastal dunes.	0-30 m.	None
Coptis laciniata	Oregon goldthread	None	None	G4?	S3?	4.2	(Feb) Mar-May (Sep-Nov)	North coast coniferous forest, meadows and seeps.	Mesic sites such as moist streambanks. 0-1,000 m.	Low
Discelium nudum	naked flag moss	None	None	G4G5	S1	2B.2	n/a	Coastal bluff scrub.	Moss that grows on moist silty clay to fine sandy banks in somewhat shaded sites. 10-50 m.	Moderate
Eleocharis parvula	small spikerush	None	None	G5	S3	4.3	(Apr) Jun-Aug (Sep)	Marshes and swamps	In coastal salt marshes. 1-3,020 m.	None
Empetrum nigrum	black crowberry	None	None	G5	S1?	2B.2	Apr-Jun	Coastal bluff scrub, coastal prairie.	3-15 m.	Low
Epilobium septentrionale	Humboldt County fuchsia	None	None	G4	S4	4.3	Jul-Sep	Broadleaved upland forest, North Coast coniferous forest	Sandy or rocky soil, 45-1,800m.	Low
Erysimum menziesii	Menzies' wallflower	E	E	G1	S1	1B.1	Mar-Sep	Coastal dunes.	Localized on dunes and coastal strand. 1-25 m.	None
Erythronium oregonum	giant fawn lily	None	None	G4G5	S2	2B.2	Mar-Jun (Jul)	Cismontane woodland, meadows and seeps.	Openings. Sometimes on serpentine; rocky sites. 300-1,435 m.	Low

Special-Status Plant Scoping List. CNDDB, CNPS, IPaC.
Annie and Mary Trail Project
March 2022

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Erythronium revolutum	coast fawn lily	None	None	G4G5	S3	2B.2	Mar-Jul (Aug)	Bogs and fens, broadleaved upland forest, north coast coniferous forest.	Mesic sites; streambanks. 60-1405 m.	Moderate
Fissidens pauperculus	minute pocket moss	None	None	G3?	S2	1B.2	n/a	North coast coniferous forest.	Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 30-1,025 m.	High
Fritillaria purdyi	Purdy's fritillary	None	None	G4	S4	4.3	Mar-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest	Serpentinite (usually)	Low
Gilia capitata ssp. pacifica	Pacific gilia	None	None	G5T3	S2	1B.2	Apr-Aug	Coastal bluff scrub, chaparral, coastal prairie, valley and foothill grassland.	5-1345 m.	Moderate
Gilia millefoliata	dark-eyed gilia	None	None	G2	S2	1B.2	Apr-Jul	Coastal dunes.	1-60 m.	None
Glehnia littoralis ssp. leiocarpa	American glehnia	None	None	G5T5	S2S3	4.2	May-Aug	Coastal dunes	0-20 m.	None
Hemizonia congesta ssp. tracyi	Tracy's tarplant	None	None	G5T4	S4	4.3	(Mar) May-Oct	Coastal prairie, Lower montane & North Coast coniferous forest.	Openings, Serpentinite (sometimes).	Moderate

Special-Status Plant Scoping List. CNDDB, CNPS, IPaC.
Annie and Mary Trail Project
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Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Hesperevax sparsiflora var. brevifolia	short-leaved evax	None	None	G4T3	S3	1B.2	Mar-Jun	Coastal bluff scrub, coastal dunes, coastal prairie.	Sandy bluffs and flats. 0-640 m.	None
Hosackia gracilis	harlequin lotus	None	None	G3G4	S3	4.2	Mar-Jul	upland and coniferous forest, woodlands, Coastal bluff scrub, Coastal prairie, Marshes and swamps, Meadows and seeps, Valley and foothill grassland	Roadsides	High
Iliamna latibracteata	California globe mallow	None	None	G2G3	S2	1B.2	Jun-Aug	North coast coniferous forest, chaparral, lower montane coniferous forest, riparian scrub (streambanks).	Seepage areas in silty clay loam. 60-1,655 m.	Low
Juncus nevadensis var. inventus	Sierra rush	None	None	G5T3T4	S1	2B.2	Jul-Nov	Bogs and fens.	0-10 m.	Low
Lasthenia californica ssp. macrantha	perennial goldfields	None	None	G3T2	S2	1B.2	Jan-Nov	Coastal bluff scrub, coastal dunes, coastal scrub.	5-185 m.	Low
Lathyrus glandulosus	sticky pea	None	None	G3	S3	4.3	Apr-Jun	Cismontane woodland		Moderate
Lathyrus japonicus	seaside pea	None	None	G5	S2	2B.1	May-Aug	Coastal dunes.	3-65 m.	None

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Annie and Mary Trail Project
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Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Lathyrus palustris	marsh pea	None	None	G5	S2	2B.2	Mar-Aug	Bogs and fens, lower montane and north coast coniferous forest, marshes and swamps, coastal prairie, coastal scrub.	Moist coastal areas. 2-140 m.	Low
Layia carnosa	beach layia	E	E	G2	S2	1B.1	Mar-Jul	Coastal dunes, coastal scrub.	On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 3-30 m.	None
Lilium kelloggii	Kellogg's lily	None	None	G3	S3	4.3	May-Aug	Lower montane coniferous forest, North Coast coniferous forest	Openings, Roadsides	Moderate
Lilium occidentale	western lily	E	E	G1	S1	1B.1	Jun-Jul	Coastal scrub, freshwater marsh, bogs and fens, coastal bluff scrub, coastal prairie, north coast coniferous forest, marshes and swamps.	Well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil; usually near margins of Sitka spruce. 3-110 m.	Low
Listera cordata	heart-leaved twayblade	None	None	G5	S4	4.2	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	5-1,370 m.	Moderate

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Annie and Mary Trail Project
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Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Lycopodiella inundata	inundated bog-clubmoss	None	None	G5	S1	2B.2	n/a	Bogs and fens, lower montane coniferous forest, marshes and swamps.	Peat bogs, muddy depressions, pond margins. 5-915 m.	None
Lycopodium clavatum	running-pine	None	None	G5	S3	4.1	Jun-Aug (Sep)	Lower montane coniferous forest, north coast coniferous forest, marshes and swamps.	Forest understory, edges, openings, roadsides; mesic sites with partial shade and light. 45-1,225 m.	Moderate
Lycopus uniflorus	northern bugleweed	None	None	G5	S4	4.3	Jul-Sep	Bogs and fens, Marshes and swamps.	5-2,000 m.	None
Mitellastra caulescens	leafy-stemmed mitrewort	None	None	G5	S4	4.2	(Mar) Apr-Oct	Broadleaved upland forest, lower montane coniferous forest, meadows and seeps, north coast coniferous forest.	Mesic sites. 5-1,700 m.	Moderate
Monotropa uniflora	ghost-pipe	None	None	G5	S2	2B.2	Jun-Aug (Sep)	Broadleaved upland forest, north coast coniferous forest.	Often under redwoods or western hemlock. 15-855 m.	Low
Montia howellii	Howell's montia	None	None	G3G4	S2	2B.2	(Feb) Mar-May	Meadows and seeps, north coast coniferous forest, vernal pools.	Vernally wet sites; often on compacted soil. 10-1,215 m.	High

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Annie and Mary Trail Project
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Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Oenothera wolfii	Wolf's evening-primrose	None	None	G2	S1	1B.1	May-Oct	Coastal bluff scrub, coastal dunes, coastal prairie, lower montane coniferous forest.	Sandy substrates; usually mesic sites. 0-125 m.	Moderate
Packera bolanderi var. bolanderi	seacoast ragwort	None	None	G4T4	S2S3	2B.2	(Jan-Apr) May-Jul (Aug)	Coastal scrub, north coast coniferous forest.	Sometimes along roadsides. 30-915 m.	Moderate
Piperia candida	white-flowered rein orchid	None	None	G3	S3	1B.2	(Mar) May-Sep	North Coast coniferous forest, lower montane coniferous forest, broadleaved upland forest.	Sometimes on serpentine. Forest duff, mossy banks, rock outcrops, and muskeg. 20-1,615 m.	Low
Pityopus californicus	California pinefoot	None	None	G4G5	S4	4.2	(Mar-Apr) May-Aug	Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Deep shade with few understory species, often under layer of duff, in rocky to clay loam soil. 15-2,225 m	Low
Pleuropogon refractus	nodding semaphore grass	None	None	G4	S4	4.2	(Mar) Apr-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest	Mesic sites along streams, grassy flats in shaded redwood groves. 0-1,600 m.	Moderate

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Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Polemonium carneum	Oregon polemonium	None	None	G3G4	S2	2B.2		Coastal prairie, coastal scrub, lower montane coniferous forest.	15-1,525 m.	Low
Ribes laxiflorum	trailing black currant	None	None	G5?	S3	4.3	Mar-Jul (Aug)	North Coast coniferous forest	Grows over logs and stumps in moist, wet places. 5-1,395 m.	Moderate
Romanzoffia tracyi	Tracy's romanzoffia	None	None	G4	S2	2B.3		Coastal bluff scrub, coastal scrub.	Rocky sites. 15-300 m.	Low
Sidalcea malachroides	maple-leaved checkerbloom	None	None	G3	S3	4.2	(Mar) Apr-Aug	Broadleaved upland forest, coastal prairie, coastal scrub, north coast coniferous forest, riparian forest.	Woodlands and clearings near coast; often in disturbed areas. 4-765 m.	Moderate
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	None	None	G5T2	S2	1B.2	(Mar) May-Aug	Coastal bluff scrub, coastal prairie, north coast coniferous forest.	Open coastal forest; roadcuts. 5-1,255 m.	Moderate
Sidalcea oregana ssp. eximia	coast checkerbloom	None	None	G5T1	S1	1B.2	Jun-Aug	Meadows and seeps, north coast coniferous forest, lower montane coniferous forest.	Near meadows, in gravelly soil. 5-1,805 m.	Moderate
Silene scouleri ssp. scouleri	Scouler's catchfly	None	None	G5T4T5	S2S3	2B.2	(Mar-May) Jun-Aug (Sep)	Coastal bluff scrub, coastal prairie, valley and foothill grassland.	5-315 m.	Low

Special-Status Plant Scoping List. CNDDB, CNPS, IPaC.
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Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence
Spergularia canadensis var. occidentalis	western sand-spurrey	None	None	G5T4	S1	2B.1	Jun-Aug	Marshes and swamps (coastal salt marshes).	0-3 m.	None
Sulcaria spiralifera	twisted horsehair lichen	None	None	G3G4	S2	1B.2	n/a	Coastal dunes, north coast coniferous forest.	0-90 m.	Low
Tiarella trifoliata var. trifoliata	trifoliate laceflower	None	None	G5T5	S2S3	3.2	(May) Jun-Aug	Lower montane conifer forest, N. Coast conifer forest	Edges, moist shady banks, streambanks. 170-1,500m.	Low
Trichodon cylindricus	cylindrical trichodon	None	None	G4G5	S2	2B.2	n/a	Broadleaved upland forest, upper montane coniferous forest, meadows and seeps.	Moss in openings on sandy or clay soils on roadsides, stream banks, trails or in fields. 35-2,005 m.	Moderate
Usnea longissima	Methuselah's beard lichen	None	None	G4	S4	4.2	n/a	N. coast conifer forest, broadleaf upland forest.	Variety of trees, incl. big leaf maple, oaks, ash, Douglas-fir, and bay. 45-1,465 m in CA.	Moderate
Viola palustris	alpine marsh violet	None	None	G5	S1S2	2B.2	Mar-Aug	Coastal scrub, bogs and fens.	Swampy, shrubby places in coastal scrub or coastal bogs. 0-150 m.	None

Special-Status Plant Scoping List. CNDDB, CNPS, IPaC.
Annie and Mary Trail Project
March 2022

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	Blooming Period	General Habitat	Microhabitat	Potential of occurrence

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW)

   E: endangered

2. Species Heritage rank as assigned by California Department of Fish and Wildlife (CDFW)

   G1/S1: critically imperiled

   G2/S2: imperiled

   G3/S3: vulnerable

   G4/S4: apparently secure

   G5/S5: secure

Rare Plant Rank descriptions available at:
CNPS Rare Plant Ranks | California Native Plant Society (CNPS)

Table 2 Botanical Species Observed 5/16, 5/19, 7/11 and 7/12/2022 Annie and Mary Trail, Arcata, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Trees			
Acer macrophyllum	big leaf maple	Sapindaceae	Y[a]
Alnus rubra	red alder	Betulaceae	Y
Eucalyptus globulus	bluegum eucalyptus	Myrtaceae	N[b]
Frangula purshiana	cascara	Rhamnaceae	Y
Fraxinus latifolia	Oregon ash	Oleaceae	Y
Malus sp.	crab apple cultivar	Rosaceae	N
Picea sitchensis	Sitka spruce	Pinaceae	Y
Pinus attenuate	knobcone pine	Pinaceae	Y
Pinus radiata	Monterey Pine	Pinaceae	N
Prunus cerasifera	red plum	Rosaceae	N
Pseudotsuga menziesii	Douglas fir	Pinaceae	Y
Salix hookeriana	Hooker's willow	Salicaceae	Y
Salix lasiandra var. lasiandra	Pacific willow	Salicaceae	Y
Salix lasiolepis	arroyo willow	Salicaceae	Y
Salix sitchensis	Sitka willow	Salicaceae	Y
Sequoia sempervirens	coast redwood	Cupressaceae	Y
Shrubs			
Buddleja davidii	butterfly bush	Scrophulariaceae	N
Erica lusitanica	Spanish heath	Ericaceae	N
Escallonia rubra	escallonia	Grossulariaceae	N
Lonicera involucrata var. ledebourii	twin berry	Caprifoliaceae	Y
Oemleria cerasiformis	oso berry	Rosaceae	Y
Prunus laurocerasus	cherry laurel	Rosaceae	N
Rosa rubiginosa	sweetbriar	Rosaceae	N
Rubus armeniacus	Himalayan berry	Rosaceae	N
Rubus spectabilis	salmonberry	Rosaceae	Y
Rubus ursinus	California blackberry	Rosaceae	Y
Ferns and Allies			
Athyrium filix-femina var. *cyclosorum*	lady fern	Woodsiaceae	Y
Equisetum arvense	horsetail	Equisetaceae	Y
Polystichum munitum	western sword fern	Dryopteridaceae	Y
Pteridium aquilinum	bracken fern	Dennstaedtiaceae	Y
Sedges and Rushes			
Carex hendersonii	Henderson's sedge	Cyperaceae	Y
Carex obnupta	slough sedge	Cyperaceae	Y
Cyperus eragrostis	tall flat sedge	Cyperaceae	Y
Juncus effusus ssp. *pacificus*	common rush	Juncaceae	Y
Juncus occidentalis	western rush	Juncaceae	Y
Juncus patens	spreading rush	Juncaceae	Y

Table 2 Botanical Species Observed 5/16, 5/19, 7/11 and 7/12/2022 Annie and Mary Trail, Arcata, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Scirpus microcarpus	panicled bullrush	Cyperaceae	Y
Grasses			
Agrostis capillaris	colonial bentgrass	Poaceae	N
Agrostis stolonifera	creeping bentgrass	Poaceae	N
Alopecurus pratensis	meadow foxtail	Poaceae	N
Anthoxanthum odoratum	sweet vernal grass	Poaceae	N
Avena barbata	wild oat	Poaceae	N
Bromus catharticus	rescue grass	Poaceae	N
Bromus diandrus	ripgut brome	Poaceae	N
Bromus hordeacus	soft chess	Poaceae	N
Bromus sitchensis var. *carinatus*	California brome	Poaceae	Y
Cortaderia selloana	pampas grass	Poaceae	N
Dactylis glomeratum	orchard grass	Poaceae	N
Digitaria sanguinalis	crabgrass	Poaceae	N
Festuca arundinacea	tall fescue	Poaceae	N
Festuca bromoides	annual brome fescue	Poaceae	N
Festuca idahoensis	Idaho fescue	Poaceae	Y
Festuca myuros	rattail sixweeks grass	Poaceae	N
Festuca perennis	wild rye	Poaceae	N
Glyceria declinata	mannagrass	Poaceae	N
Holcus lanatus	velvet grass	Poaceae	N
Hordeum marinum ssp. *glaucum*	foxtail	Poaceae	N
Paspalum dilatatum	dallis grass	Poaceae	N
Phalaris arundinacea	canary reed grass	Poaceae	Y
Poa annua	annual grass	Poaceae	N
Poa pratensis	Kentucky bluegrass	Poaceae	N
Herbs			
Alisma triviale	northern water plantain	Alismataceae	Y
Allium triquetrum	three cornered leek	Alliaceae	N
Asarum caudatum	wild ginger	Aristolochiaceae	Y
Bellis perenne	English daisy	Asteraceae	N
Callitriche heterophylla	water starwort	Plantaginaceae	Y
Calystegia silvatica ssp. *disjuncta*	false bindweed	Convolvulaceae	N
Cardamine oligosperma	bittercress	Brassicaceae	Y
Cerastium glomeratum	mouse-ear chickweed	Caryophyllaceae	N
Cirsium vulgare	bull thistle	Asteraceae	N
Convolvulus arvensis	field bindweed	Convolvulaceae	N
Crepis capillaris	smooth hawksbeard	Asteraceae	N
Crocosmia x crocosmiiflora	montebretia	Iridaceae	N
Daucus carota	Queen Anne's lace	Apiaceae	N
Dipsacus fullonum	teasel	Dipsacaceae	N
Erodium cicutarium	heron's bill	Geraniaceae	N

Table 2 Botanical Species Observed 5/16, 5/19, 7/11 and 7/12/2022 Annie and Mary Trail, Arcata, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Eschscholzia californica	California poppy	Papaveraceae	Y
Euphorbia peplus	petty spurge	Euphorbiaceae	N
Foeniculum vulgare	fennel	Apiaceae	N
Galium aparine	cleaver plant	Rubiaceae	N
Geranium dissectum	cutleaf geranium	Geraniaceae	N
Geranium robertianum	Robert's geranium	Geraniaceae	N
Hirschfeldia incana	hoary mustard	Brassicaceae	N
Hypochaeris radicata	hairy cat's-ear	Asteraceae	N
Lathyrus hirsutus	hairy pea	Fabaceae	N
Lathyrus latifolius	sweet pea	Fabaceae	N
Leontodon saxatilis ssp. *saxatilis*	hawkbit	Asteraceae	N
Lepidium strictum	peppergrass	Brassicaceae	Y
Linum bienne	flax	Linaceae	N
Lotus corniculatus	bird's-foot trefoil	Fabaceae	N
Lysimachia arvensis	scarlet pimpernel	Myrsinaceae	N
Malva parviflora	cheeseweed	Malvaceae	N
Matricaria discoidea	pineappleweed	Asteraceae	Y
Medicago polymorpha	bur-clover	Fabaceae	N
Mentha pulegium	pennyroyal	Lamiaceae	N
Mentha spicata	peppermint	Lamiaceae	N
Modiola caroliniana	Carolina bristle mallow	Malvaceae	N
Nasturtium officinale	watercress	Brassicaceae	Y
Oenanthe sarmentosa	water parsley	Apiaceae	Y
Plantago coronopus	buckhorn plantain	Plantaginaceae	N
Plantago lanceolata	English plantain	Plantaginaceae	N
Plantago major	common plantain	Plantaginaceae	N
Polygonum aviculare ssp. *aviculare*	prostrate knotweed	Polygonaceae	N
Prunella vulgaris var. *lanceolata*	self-heal	Lamiaceae	Y
Ranunculus repens	creeping buttercup	Ranunculaceae	N
Raphanus sativa	wildradish	Onagraceae	N
Rumex acetosella	sheep sorell	Polygonaceae	N
Rumex crispus	curly dock	Polygonaceae	N
Sonchus oleraceus	sow thistle	Asteraceae	N
Spergularia rubra	purple sand spurry	Caryophyllaceae	N
Stachys ajugoides	bugle hedgenettle	Lamiaceae	Y
Stellaria media	chickweed	Caryophyllaceae	N
Taraxacum officinale	dandelion	Asteraceae	N
Tolmiea menziesii	youth on age	Saxifragaceae	Y
Tragopogon porrifolius	purple salsify	Asteraceae	N
Trifolium dubium	shamrock clover	Fabaceae	N
Trifolium fragiferum	strawberry clover	Fabaceae	N
Trifolium hybridum	aslike clover	Fabaceae	N
Trifolium repens	white clover	Fabaceae	N

Table 2 Botanical Species Observed 5/16, 5/19, 7/11 and 7/12/2022 Annie and Mary Trail, Arcata, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Trifolium subterraneum	subterranean clover	Fabaceae	N
Triphysaria eriantha	butter 'n' eggs	Orobanchaceae	Y
Typha latifolia	cattail	Typhaceae	Y
Veronica arvensis	speedwell	Plantaginaceae	N
Vicia sativa ssp. sativa	spring vetch	Fabaceae	N
Vinca major	vinca	Apocynaceae	N
143 Species			**34% Native**

[a] Y: Yes
[b] N: No

Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Fort Bragg, CA | Coos Bay, OR | Klamath Falls, OR

Appendix F

Wetland Constraints Assessment

Phone: (707) 822-5785 **Email:** info@shn-engr.com **Web:** shn-engr.com
1062 G Street, Suite I, Arcata, CA 95521-5800

Reference: 021170.001

Wetland Constraints Assessment Update
Annie and Mary Trail
Sunset Avenue to Humboldt Bay
Municipal Water District Park 1

March 2022

Introduction

The project consists of the development of a trail system through the City of Arcata from Sunset Avenue to the Humboldt Bay Municipal Water District Park 1 (Park 1) along the Mad River on the existing railroad right-of-way (ROW). This study is intended to ascertain potential wetland locations within the limits of the proposed trail corridor along the railroad ROW; it is not intended to delineate wetlands within the study area. The results of this study will be used in the planning and environmental review stages of the trail project to minimize or prevent impacts to wetlands present within the proposed trail alignment (see Appendix 1, Figure 1). Photos of the study area are included in Appendix 2.

Existing Conditions

The project area consists of 3.4 miles of railroad ROW. The 2.25 miles of ROW from Sunset Avenue to West End Road (Appendix 1, Figures 2-8) contain existing railroad infrastructure that has remained idle for 26 years. Railroad tracks remain in place; however, large portions of the ROW are densely covered in shrub, bramble, or young tree growth, reflecting the years since they were last used. Dominant species are primarily non-native with Cotoneaster (*Cotoneaster lacteus* and *Cotoneaster franchetii*), Himalayan blackberry (*Rubus armeniacus*), pampas grass (*Cortaderia jubata*), Spanish heather (*Erica lusitanica*), and other non-native herbaceous species, primary dominants. However, there are some areas where native species are dominant, specifically hooker willow (*Salix hookeriana*), red alder (*Alnus rubra*), and California blackberry (*Rubus ursinus*).

The remaining 1.25 miles of ROW from West End Road to Park 1 (Appendix 1, Figures 9-12) contains no railroad infrastructure; only the railbed remains. Service on this portion of the ROW ceased in the early 1990s and railroad infrastructure, including ties and rails, were removed by 1998 (HCAOG, 2010). This portion of the ROW is overgrown, but also contains a greater mix of native species cover. Portions of the ROW pass through mature forested hillslopes with a healthy understory. Invasive English ivy (*Hedera helix*) was abundant within wide swathes of this portion of the ROW.

The railbed is composed of coarse, well-drained gravels typically elevated above the surrounding trailway. Most of the soils within the study area have been manipulated and, as such, are best described as urban/industrial soils (UI). Drainage ditches are located alongside the railbed harbor

wetlands along large portions of the study area (see Appendix 1, Figures 2 and 3 and 7-9). Along the 2.25-mile section from Sunset Avenue to West End Road, the rail ROW crosses three streams, two of which are Class I streams (Janes Creek-Stream 3 (Appendix 1, Figure 4), and South Fork Janes Creek-Stream 2 (Appendix 1, Figure 5), and another that is a Class II stream (Janes Creek tributary, Stream 1; Appendix 1, Figures 4-7). Along the 1.15-mile section from West End Road to Park 1, the ROW crosses three Class III streams. Two of these streams are likely intermittent (Streams 5 and 6; Appendix 1, Figure 12) but still have ordinary high water mark (OHWM) indicators present (see Appendix 3, OHWM datasheet). The third stream (Stream 4; Appendix 1, Figure 11) is likely perennial, with a larger stream channel with OHWM indicators present. Culvert failure has led to the erosion of the railbed where it crosses this stream.

Methods

In order to assess wetland and habitat conditions, an SHN senior soil scientist and senior ecologist walked the majority of the proposed trail alignment between Sunset Avenue and West End Road along the railroad ROW on November 27, 2018, and between West End Road and Park 1 on January 7 and 12, 2022. Potential wetland areas were noted, along with dominant species. A summary of the findings is included in Appendix 1, Figures 2-12. A portion of the trail alignment between the Saint Louis Road overpass and 250 feet southwest of U.S. Highway 101 overpass was not walked, due to extremely dense vegetation cover and the presence of active homeless camps within the ROW (Appendix 1, Figure 4). In addition, a distance of approximately 100 feet was not walked within the vicinity of a residence off West End Road as landowner approval was not obtained in time for the walkthrough (Appendix 1, Figure 10). There is the potential that additional wetlands occur in the portions of the alignment that were not investigated.

A wetland delineation was not conducted as part of this study but will be completed as part of Phase 2 of the project to assist with development of the final project design. Potential wetland areas were noted based on the observed dominance by wetland vegetation and wetland hydrology. Four wetland test pits were excavated and one OHWM was delineated to further investigate the potential for wetland conditions (Appendix 3). Test pits were sited to represent large areas of similar wetlands or to ascertain conditions within locations that were not obviously wetland using just vegetation. Wetland test pit investigations used the Army Corp of Engineers three-parameter wetland investigation methods for vegetation, soil, and hydrology investigation (USACE, 2010). Results from the wetland assessment are recorded below.

Results

Many potential wetlands occur within the railroad ROW adjacent to the railbed (see Appendix 1, Figures 2-12; Appendix 2; and Appendix 4). Potential wetland areas were observed primarily within drainage ditches alongside the railbed (see Appendix 3, test pits [TPs] 1 and 3) for representative conditions). Within the TP1 location, two wetland parameters were observed. Hydrophytic vegetation was dominant with small fruited bulrush (*Scirpus microcarpus*) and tall fescue (*Festuca arundinacea*) being the dominant species. Wetland hydrology was observed with a water table at 11 inches, saturation to the surface and a vegetation community that met the FAC neutral test. Hydric soils were not present, likely as a result of the gravelly railbed soils. Within the TP 3 location, three wetland parameters were observed. Hydrophytic vegetation dominance was present, as observed by numerous dominant wetland species, a positive Alpha-alpha dipyridyl reaction indicating hydric soils, and surface water, a high-water table, and saturation indicating wetland hydrology. Wetland conditions were perched atop an extremely compacted layer at 6.5 inches, likely from historical railroad activity. Conditions recorded at these two TPs are likely representative of wetland conditions within the ditches adjacent to the railbed throughout

the alignment. Many of these features are associated with plugged drainage ditches on the inboard side of the railbed. Several potential wetlands were observed within the railbed itself in the portion of the ROW between West End Road and Park 1 (see Appendix 3, TP 4 for representative conditions). Within TP4, two wetland parameters were observed. Hydrophytic vegetation was dominant with tall fescue being the dominant species. Hydric soils were present with redox dark surface (F6) observed. Wetland hydrology was not observed at the time of the investigation, even though heavy rain had occurred a few days prior. It may be that the gravelly soils are too well drained to support wetland hydrology indicators long-term. TP4 is representative of potential wetland areas perched on top of the former railbed within the ROW. Potential wetlands occurring in this portion of the ROW likely formed after the removal of rail infrastructure and are perched atop the compacted gravel of the railbed. Additional potential wetlands were observed associated with Janes Creek and its tributaries (see Appendix 1, Figures 4-7). No TPs were excavated in these potential wetland areas, and these features will be delineated at a later date.

Potential wetlands within drainage ditches were mostly freshwater emergent wetlands, dominated by hydrophytic annual and perennial herbaceous species. The most common species observed within the drainage ditch wetlands included the common rush (*Juncus effuses* ssp. *pacificus*), spreading rush (*Juncus patens*), and lady fern (*Athyrium filix-femina* var. *cyclosorum*). In perennially wet areas, panicled bulrush (*Scirpus microcarpus*) and slough sedge (*Carex obnupta*) were present.

Large drainage ditches adjacent to the ROW as well as potential wetlands associated with Janes Creek and its tributaries were most likely freshwater forested/shrub wetlands. Dominant species within these possible riparian wetlands included hooker willow, red alder, and, less frequently, Pacific willow (*Salix lasiandra* var. *lasiandra*). Potential freshwater forested/shrub wetlands were most extensive in the mid-portion of the proposed trail alignment, specifically between the defunct Humboldt Flakeboard plant and Alder Grove Road, and on the western edge of the railbed between Alder Grove Road and Frank Martin Court (see Appendix 1, Figures 6-8). There is a constructed drainageway that runs along the northern boundary of the Wes Green facility adjacent to the ROW. It is managed for use in their stormwater pollution protection plan. This drainageway parallels U.S Highway 299, where it turns west along West End Road and flows under the highway (Appendix 1, Figures 9 and 10). Although this may be a two- and three-parameter wetland feature, it is being managed for stormwater treatment purposes, and impacts to this feature may need to be calculated differently than other potential wetland areas. Upland conditions throughout the study area vary with a wide range of dominant upland species, and no wetland hydrology indicators, and many different soil types including well drained loams, gravels, and others. TP 2 represents conditions within one upland area; however, conditions vary widely.

Conclusions and Recommendations

Potential two- and three-parameter wetlands are present in drainage ditches and streamside habitat within the proposed trail alignment, as well as within the railbed in several distinct locations along the alignment. Most of these potential wetlands are severely disturbed by past industrial use and ongoing anthropogenic incursion and are dominated by non-native species. The average width of likely drainage ditch wetlands is between 2 and 4 feet wide, with an average of 20 feet of upland railbed between ditches (see Appendix 3, TP 2 for representative upland conditions) where drainage ditches occur on both sides of the railbed.

Within the ROW, approximately 26,950 sf (0.62 ac) of potential wetlands occur and may be impacted by the proposed project. In addition, approximately 3,963 sf (0.09 ac) of managed ditch occur and may be impacted by the project. Potential wetlands and streams occur throughout the ROW such that a 100-foot buffer for these features encompasses approximately 601,075 sf (13.8 ac) of the ROW, which would be encroached upon or impacted as a result of the project.

It is recommended that all wetlands be avoided to the greatest extent feasible during the implementation of this project. Where avoidance is not feasible, it is recommended that two- and three-parameter wetlands to be permanently impacted by the project receive compensatory, in-kind mitigation at a minimum replacement ratio of 1.2:1 or at a ratio that satisfies regulatory agency standards. Potential wetlands associated with riparian habitat and wetlands supporting higher quality habitat should be considered for higher levels of protection, enhancement, and compensatory mitigation ratios. Temporary wetland impacts occurring during project implementation should be mitigated through a combination of wetland enhancement activities including invasive species removal, garbage cleanup, and native vegetation planting. Furthermore, encroachment into wetland buffer areas (identified as 50 to 100 feet around wetlands by the City of Arcata as shown on supporting figures) should be enhanced through planting of native vegetation screening; invasive species removal; wildlife friendly fencing, where warranted, to prevent encroachment; and other enhancement measures. In addition, culvert replacement should occur within suitable streams to enhance stream conditions and to minimize localized flooding and erosion.

References

Humboldt County Association of Governments (HCAOG). (2010). "Chapter 4, Active Transportation System," in "Humboldt County Regional Trails Master Plan." Pp. 37-42. Accessed April 17, 2015. Eureka, CA:HCAOG.

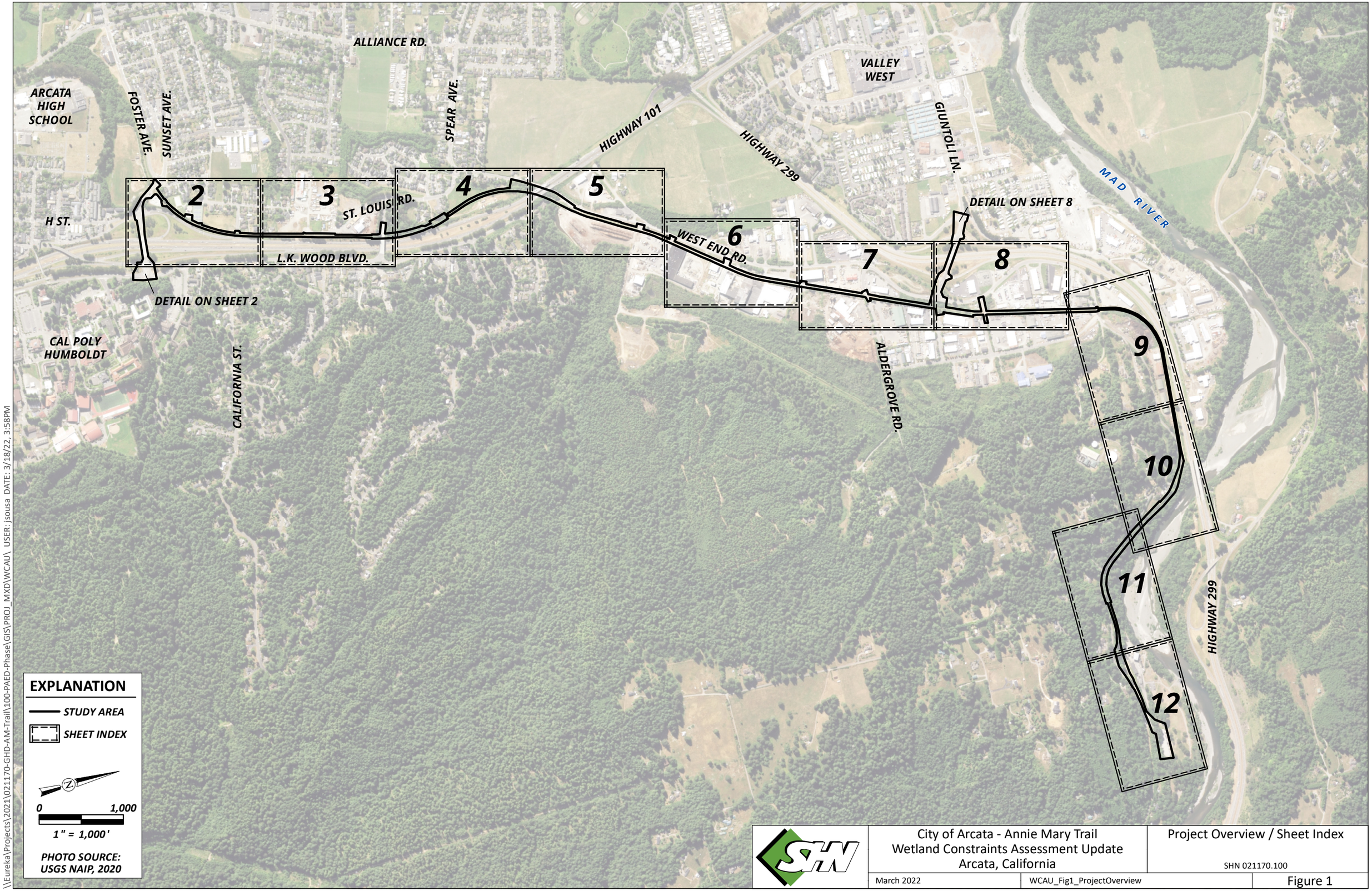
U.S. Army Corps of Engineers (USACE). (2010). "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region," J.S. Wakeley, R.W. Lichvar, and C.V. Noble (eds) ERDC/EL TR-08-03. Vicksburg, MS: USACE Research and Development Center.

Appendices

1. Figures
2. Site Photographs
3. Data Sheets
4. National Wetland Inventory Maps

Project Figures

1



\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 3:58PM

	City of Arcata - Annie Mary Trail Wetland Constraints Assessment Update Arcata, California	Project Overview / Sheet Index SHN 021170.100
	March 2022 / WCAU_Fig1_ProjectOverview	Figure 1

ARCATA HIGH SCHOOL

JAY ST.

SKATE PARK

LARSON PARK

EYE ST.

TODD CT.

TODD CT.

SUNSET AVE.

HIGHWAY 101

L.K. WOOD BLVD.

SEE DETAIL

DETAIL

EXPLANATION

- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- CULVERT
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:08PM

	City of Arcata - Annie Mary Trail Wetland Constraints Assessment Update Arcata, California	Sunset Ave. to Todd Ct. SHN 021170.100
	March 2022 | WCAU_Fig2_SunsetAveToToddCt	Figure 2

EXPLANATION

- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

0 100

1 " = 100 '±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

CRAFTSMAN'S MALL

ST. LOUIS RD.

NOT WALKED (NO ACCESS)

MAD RIVER LUMBER

HIGHWAY 101

L.K. WOOD BLVD.

City of Arcata - Annie Mary Trail Wetland Constraints Assessment Update Arcata, California		Todd Ct. to St. Louis Rd. SHN 021170.100
March 2022	WCAU_Fig3_ToddCtToStLouisRd	Figure 3

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:14PM

EXPLANATION

- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1 " = 100 '±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

ST. LOUIS RD.

STREAM 3
(JANES CREEK)

WEST END RD.

HIGHWAY 101

NOT WALKED
(NO ACCESS)

STREAM 1

L.K. WOOD BLVD.

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:18PM

City of Arcata - Annie Mary Trail Wetland Constraints Assessment Update Arcata, California		St. Louis Rd. to West End Rd. SHN 021170.100
March 2022	WCAU_Fig4_StLouisRdToWestEndRd	Figure 4

HIGHWAY 101

WEST END CT.

STREAM 3
(JANES CREEK)

STREAM 2

WEST END RD.

ALVES
INC.

EXPLANATION

- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:22PM

SHN	City of Arcata - Annie Mary Trail Wetland Constraints Assessment Update Arcata, California	West End Rd. to Alves Inc. SHN 021170.100
	March 2022 | WCAU_Fig5_WestEndRdToAlves	Figure 5

STREAM 3
(JANES CREEK)

BETTENDORF
TRUCKING

WEST END RD.

ALVES
INC.

EXPLANATION

- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:23PM

City of Arcata - Annie Mary Trail
Wetland Constraints Assessment Update
Arcata, California

Alves Inc. to Bettendorf Trucking

SHN 021170.100

March 2022 | WCAU_Fig6_AlvesToBettendorf | Figure 6

THE MILL YARD

NORTHCOAST FABRICATORS

HIGHWAY 299

WEST END RD.

ALDER GROVE RD.

RENNER PETROLEUM

CREEK 3 (JANES CREEK)

ARCATA FOREST PRODUCTS

NORTHCOAST AWNING

EXPLANATION

- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE: CITY OF ARCATA, 11/2017

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:27PM

City of Arcata - Annie Mary Trail
Wetland Constraints Assessment Update
Arcata, California

Northcoast Fabricators to Northcoast Awning
SHN 021170.100

March 2022 | WCAU_Fig7_NCFabricatorstoNCAwning | Figure 7

SEE DETAIL

DETAIL

GIUNTOLI LN.

GIUNTOLI LN.

HIGHWAY 299

HIGHWAY 299

WEST END RD.

CRESTMARK

EXPLANATION

- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- CULVERT
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:28PM

SHN	City of Arcata - Annie Mary Trail Wetland Constraints Assessment Update Arcata, California	Giuntoli Ln. to Crestmark SHN 021170.100
	March 2022 | WCAU_Fig8_GiuntoliLnToCrestmark	Figure 8

EXPLANATION

- TEST PIT
- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- MANAGED DITCH
- CULVERT
- STUDY AREA

N

0 100

1 " = 100 '±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

HIGHWAY 299

TP1

WES GREEN

WEST END RD.

RIGHT OF WAY NORTH OF THIS POINT NOT ASSESSED IN 2018

TP4

ERICSON WAY

NORTH COAST LABORATORIES

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:29PM

City of Arcata - Annie Mary Trail Wetland Constraints Assessment Update Arcata, California		Ericson Way to Wes Green SHN 021170.100
March 2022	WCAU_Fig9_EricsonWayToWesGreen	Figure 9

HIGHWAY 299

WEST END RD.

MAD RIVER

PIPELINE RD.

REBECCA LN.

FIGURE 10
FIGURE 11

EXPLANATION

- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- MANAGED DITCH
- CULVERT
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

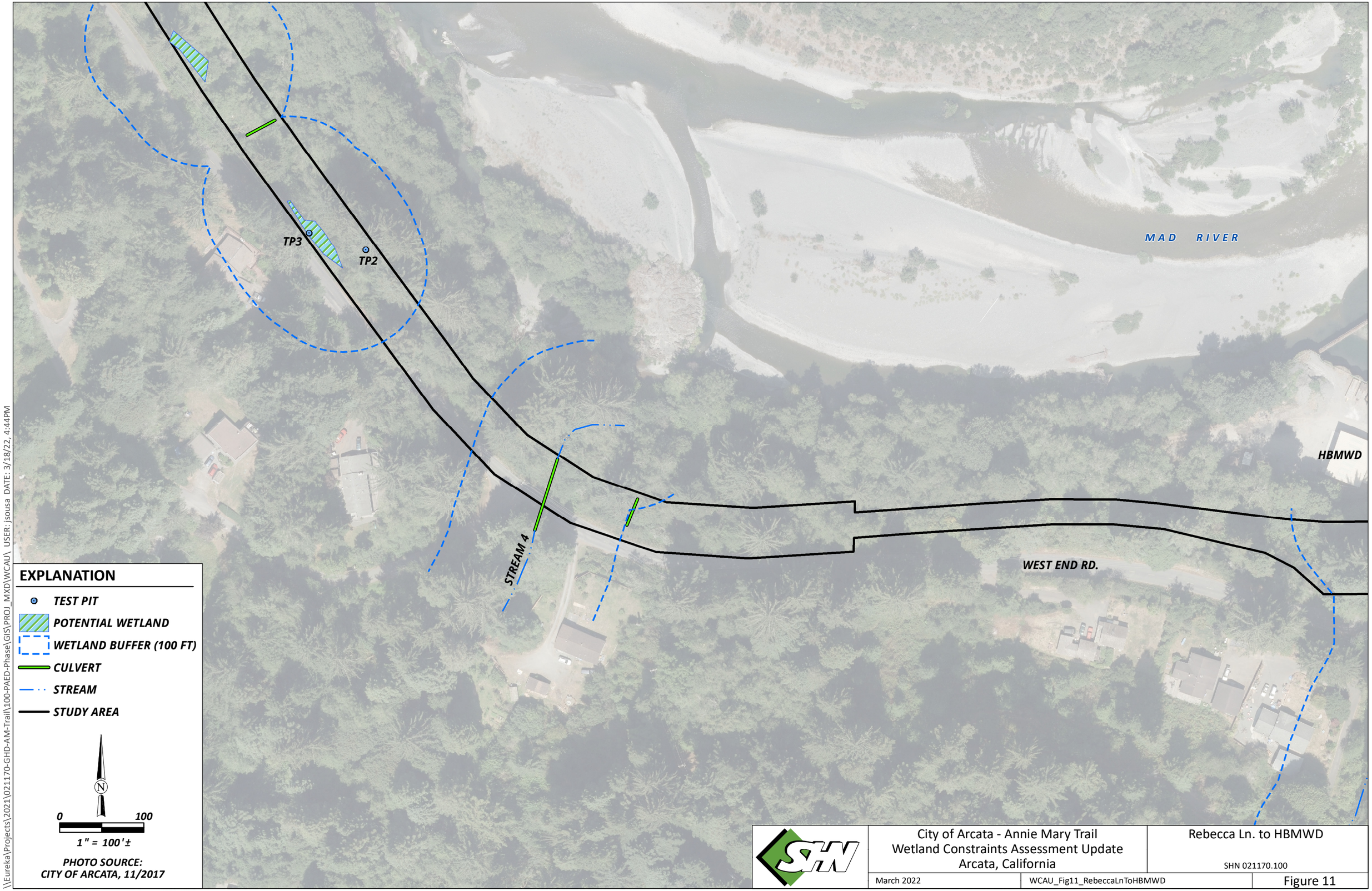
\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:35PM

City of Arcata - Annie Mary Trail
Wetland Constraints Assessment Update
Arcata, California

Wes Green to Rebecca Ln.

SHN 021170.100

March 2022 | WCAU_Fig10_WesGreenToRebeccaLn | Figure 10



EXPLANATION

- TEST PIT
- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1" = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:44PM

City of Arcata - Annie Mary Trail
Wetland Constraints Assessment Update
Arcata, California

Rebecca Ln. to HBMWD

SHN 021170.100

March 2022 | WCAU_Fig11_RebeccaLnToHBMWD | Figure 11

MAD RIVER

PUMP STATION NO. 1 PARK

HBMWD

OHWM

WEST END RD.

STREAM 5

STREAM 6

EXPLANATION

- POTENTIAL WETLAND
- WETLAND BUFFER (100 FT)
- CULVERT
- STREAM
- STUDY AREA

N

0 100

1 " = 100'±

PHOTO SOURCE:
CITY OF ARCATA, 11/2017

City of Arcata - Annie Mary Trail
Wetland Constraints Assessment Update
Arcata, California

HBMWD Pump Station Park No. 1

SHN 021170.100

March 2022 | WCAU_Fig12_HBMWDPumpStationParkNo1 | Figure 12

\\Eureka\Projects\2021\021170-GHD-AM-Trail\100-PAED-Phase\GIS\PROJ_MXD\WCAU\ USER: jsousa DATE: 3/18/22, 4:43PM

Project Area Photos

2

Photo 1: Potential freshwater emergent drainage ditch wetland between U.S. Highway 101 and railbed, looking southeast. Potential wetland is approximately 2 feet wide and abruptly transitions to upland on either side of the potential wetland.

Photo 2: Typical conditions within the southern portion of the proposed trail alignment, looking north. Note potential wetland in ditch on right side of tracks. Also note invasive species dominance on both sides of the rail bed.

Photo 3: Potential freshwater forested/shrub wetland along the rail bed, looking northwest. Note drainage ditch with potential two- and three-parameter wetlands approximately 3 feet wide, tree and shrub growth much wider. Invasive pampas grass is prevalent in this area.

Photo 4: Potential freshwater forested/shrub wetland along the railbed, looking west. Note drainage ditch with potential two- and three-parameter wetlands approximately 3-feet wide, tree and shrub growth much wider.

Photo 5: Typical conditions along the northern portion of the proposed trail alignment, looking north. Note potential freshwater forested/shrub wetland (ditch 2-3 feet wide) on left hand side of photo. Pampas grass is dominant within upland railbed.

Photo 6: Conditions within the proposed alignment just north of the St. Louis Road overpass, looking north. Note riparian woodland in background. Mixed native California blackberry/ Himalayan blackberry thicket dominant, many transient camps present.

Photo 7: Recent vegetation clearing reveals cross section of conditions. Note wetland conditions in ditch, here approximately 3-feet wide. The remaining area is upland rail bed dominated by pampas grass.

Photo 8: Typical conditions within potential freshwater forested/shrub wetland. Note Himalayan blackberry, and pampas grass in upland areas along the edges.

Photo 9: OHWM #1 at Plant 1, Class III stream (see data sheet in Appendix 4). Photo taken 1/12/22.

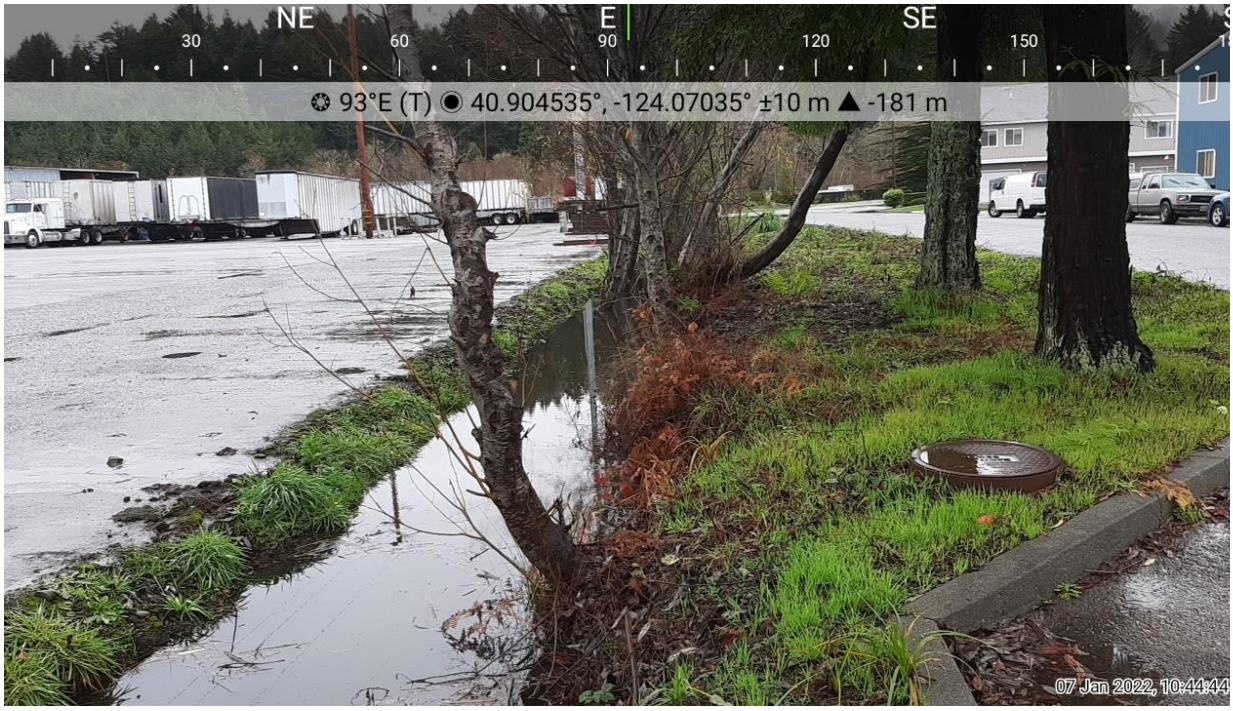


Photo 10: Potential wetland north of Humboldt Educare Preschool, parallel to Frank Martin Ct. Photo taken 1/7/22.

Photo 11: Potential freshwater forested/shrub wetlands in the mid-portion of the proposed trail alignment. Photo taken 1/7/22.

Photo 12: Wes Green maintained constructed ditch parallel to Hwy 299 looking east. Photo taken 10/4/19.

Photo 13: TP2 located along West End Road. Typical low depression area with wetland plant species. Photo taken 1/12/22.

Data Sheets 3

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

Project/Site: A+M Trail Alignment City/County: Humboldt County Sampling Date: 1/7/22
Applicant/Owner: City of Arcata State: CA Sampling Point: TP1
Investigator(s): Cindy Wilcox, Joseph Sabler Section, Township, Range:
Landform (hillslope, terrace, etc.): Railbed fill Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR): A, MLRA-4B Lat: 40.910173° Long: -124.066331° Datum: WGS84
Soil Map Unit Name: 210: Dungan 0-2% slopes NWI classification: None
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 X 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 ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 0)	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: 5ft)			
1. Scirpus microcarpus	75	✓	OBL
2. Holcus lanatus	10		FAC
3. Festuca arundinacea	25	✓	FAC
4. Vicia sativa	1		UPL
5. Ranunculus repens	1		FAC
6. Equisetum arvense	1		FAC
7. Phalaris arundinacea	1		FACW
8.			
9.			
10.			
11.			
	114 = Total Cover	57	22.8
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 2%

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:
- X 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:
Scirpus microcarpus dominant within slight depression

SOIL

Sampling Point: TP 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-11	10YR 3/2	100					SiCL	Many fine roots (across all horizons)
11-24	10YR 3/2	98	5YR 4/6	1	C	PL	SiCL	w/ occ. gravel + cobble in bottom horizons
			2.5Y 5/6	1	D	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: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): N/A
Water Table Present?	Yes X	No ___	Depth (inches): 11 in
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): surface

Wetland Hydrology Present? Yes X No ___

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

Remarks:

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

Project/Site: A+M Trail Alignment City/County: Humboldt County Sampling Date: 1/12/22
Applicant/Owner: City of Arcata State: CA Sampling Point: TP2
Investigator(s): Joseph Sater, Cindy Wilcox Section, Township, Range:
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR): M, MLRA-4B Lat: 40.907405 Long: -124.059656 Datum: WGS84
Soil Map Unit Name: 258: Lepoil-Espa-Candy Mtn Complex, 15-50% NWI classification: None
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 X 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: Visited site during heavy rain and noticed transitory pooling.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea sitchensis	70	✓	FAC
2. Sequoia sempervirens	10		NL
3. Acer macrophyllum	20	✓	FACU
4.			
	100	= Total Cover	50/20

Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus ursinus	17	✓	FACU
2. Frangula purshiana	5	✓	FAC
3.			
4.			
5.			
	23	= Total Cover	11.5/4.5

Herb Stratum (Plot size: 5ft)			
1. Carex hendersonii	12	✓	FAC
2. Juncus effusus	5		FACW
3. Asarum caudatum	15	✓	FACU
4. Polystichum munitum	18	✓	FACU
5. Tolmiea menziesii	3		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	53	= Total Cover	26.5/10.6

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 47%*

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (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:
* Litter, duff and Lindbergia praelonga

SOIL

Sampling Point: TP2

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
0-5	10YR 3/2	100					SiCL	
5-24+	10YR 5/4	65	10YR 6/1	10	D	M	C	
	7.5YR 5/8	25	~~10YR 5/8~~	~~25~~			C	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): N/A

Water Table Present? Yes _____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Recent rains and normal climatic conditions.

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

Project/Site: A+M Trail Alignment City/County: Humboldt County Sampling Date: 1/12/22

Applicant/Owner: State: CA Sampling Point: TP 3

Investigator(s): Cindy Wilcox, Joseph Salter Section, Township, Range:

Landform (hillslope, terrace, etc.): Cutbank hillslope Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA -4B Lat: 40.907454 Long: -124.059901 Datum: WGS84

Soil Map Unit Name: 258: Lepoil-Espa-Candy Mtn Complex 15-50% NWI classification: None

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 X 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: Geomorphic position within compacted old railbed.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	40	✓	FAC
2. Picea sitchensis	50	✓	FAC
3.			
4.			
	90 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Lonicera involucrata var. ledebourii	25	✓	FAC
2. Rubus spectabilis	10	✓	FAC
3. Rubus ursinus	10	✓	FACU
4.			
5.			
	45 = Total Cover 22.5		
Herb Stratum (Plot size: 5ft)			
1. Carex obnupta	40	✓	OBL
2. Cyperus eragrostis	4		FACW
3. Oenanthe sarmentosa	20	✓	OBL
4. Phalaris arundinacea	1		FACW
5. Juncus effusus	2		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	67 = Total Cover 33.5 13.4		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 33*

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[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:

* Bare soil + Litter

SOIL

Sampling Point: TP3

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	10YR 3/2	100					SiL	W/ occ. gravel
2-6.5	10YR 3/2	92	10YR 5/8	8	*		SiCL	w/ gravel
6.5-11	2.5Y 5/2	100					GrSL	Extremely compacted 3 Railbed fill
11-21	5Y 5/2	100					GrLS	Occ. gravel
21-24	10YR 5/8	65	25Y 6/1	20	D	M	C	Clay (Native soil)
	10YR 6/3	20						

[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)
- X Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: X Nodules of incorporated hillslope soil material. Not redox material - Not F6, but a negative (+) a,a,d reaction. Perched water
• positive AAD reaction w/i 6 inches of surface. = OTHER
• Extremely compacted railbed ~~restricted root investigation~~ (6.5-11) perches wetland.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- X 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)

- X 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)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 1 in

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

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

Wetland Hydrology Present? Yes X No ____

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

Remarks:

Hydrology perched abv Extremely compacted gravel at 6.5in
Not saturated below compacted layer.

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

Project/Site: A&M Trail Alignment City/County: Humboldt County Sampling Date: 1/12/22

Applicant/Owner: City of Arcata State: CA Sampling Point: TP4

Investigator(s): Joseph Sater, Cindy Wilcox Section, Township, Range:

Landform (hillslope, terrace, etc.): Alluvial plain, Rail bed Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.908538° Long: -124.069899° Datum: WGS84

Soil Map Unit Name: 196: Mad River, 0-2% Slopes NWI classification: None

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 X 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 ✓
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

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: 5ft)			
1. Festuca arundinacea	72	✓	FAC
2. Vicia sativa	1		UPL
3. Plantago lanceolata	5		FACU
4. Rumex crispus	1		FAC
5. Geranium dissectum	1		NI
6. Lotus corniculatus	5		FAC
7. Hypochaeris radicata	3		FACU
8. Sonchus oleraceus	1		UPL
9. Daucus carota	2		FACU
10. Festuca perennis	3		FAC
11. Trifolium repens	6		FAC
	100 = Total Cover		50/20
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 8 *

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
- ___ 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:

* Thatch Vegetation regularly mowed

SOIL

Sampling Point: TP4

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	10YR 3/2	100					L	many fine roots
2-10	2.5Y 3/2	93	5YR 5/8	6	C	M	GrSL	
			10YR 6/8	1	C	M		
10-21+	2.5Y 3/2	100					GrSL	w/ occ. cobble

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

Large iron railroad spike at 4-6 inches

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

Wetland Hydrology Present? Yes ____ No X

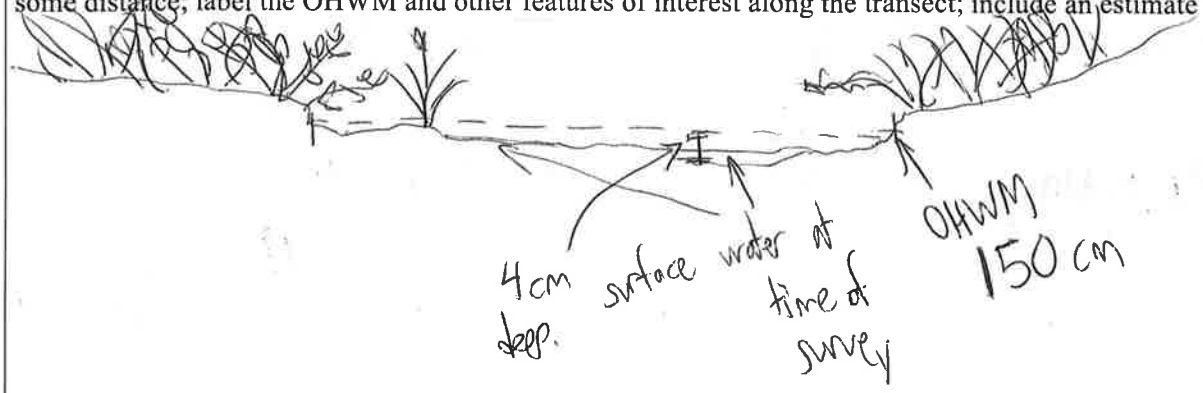
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Transitory pooling observed during heavy rain a few days prior to TP investigation

Datasheet # 1 **OHWM Delineation Datasheet** Page ___ of ___

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☒ Sharp (> 60°) | ☒ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:
Very shallow streambed, OHWM break in slope somewhat well defined

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	40	50	10	Ø	Ø	Minimal
Below OHWM	30	30	40	Ø	Ø	N

Notes/Description:
Abundant gravel below OHWM from roadway erosion. Hillslope soils above OHWM silty and sandy from Mad River floodplain, Organic material present.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	75	100	20	Ø
Below OHWM	75 (overhang)	15	10	75%

Notes/Description:
Dense Rubus brambles on slope above OHWM. Red alder canopy extends over small stream. Some wetland dependent herbaceous species below OHWM

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- Litter removal
- Erosion / scour
- Sedimentation / silt deposits
- Drift / wrack
- Water staining

OHWM Delineation Cover Sheet Page ____ of ____

Project: A+M Wetland Investigation **Date:** January 12, 2022

Location: HBMWD Park **Investigator(s):** Joseph Sater, Cindy Wilcox

Project Description:

Multi use trail development in old Railroad right of way.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Small seasonal stream, culverted under West end road and HBMWD Park driveway from steep hillslope down RSP road bank and into wetlands. Stream has high amounts of gravel from adjacent roadways.

Off-site Information 40.907014°, -124.052136°

Remotely sensed image(s) acquired? ☐ **Yes** ☒ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

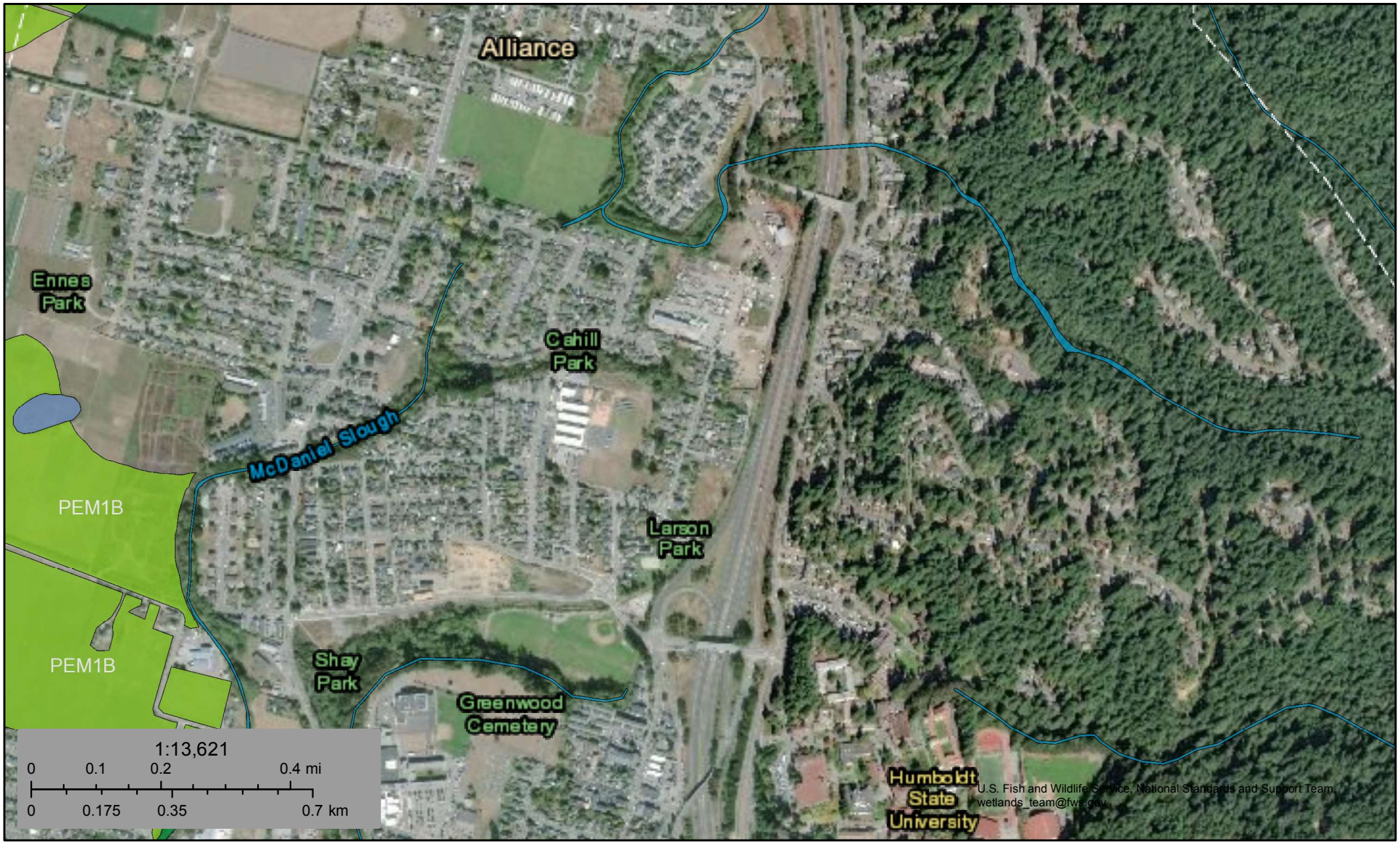
Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

National Wetlands Inventory Maps

4

U.S. Fish and Wildlife Service
National Wetlands Inventory

A+M Arcata South NWI



November 26, 2018

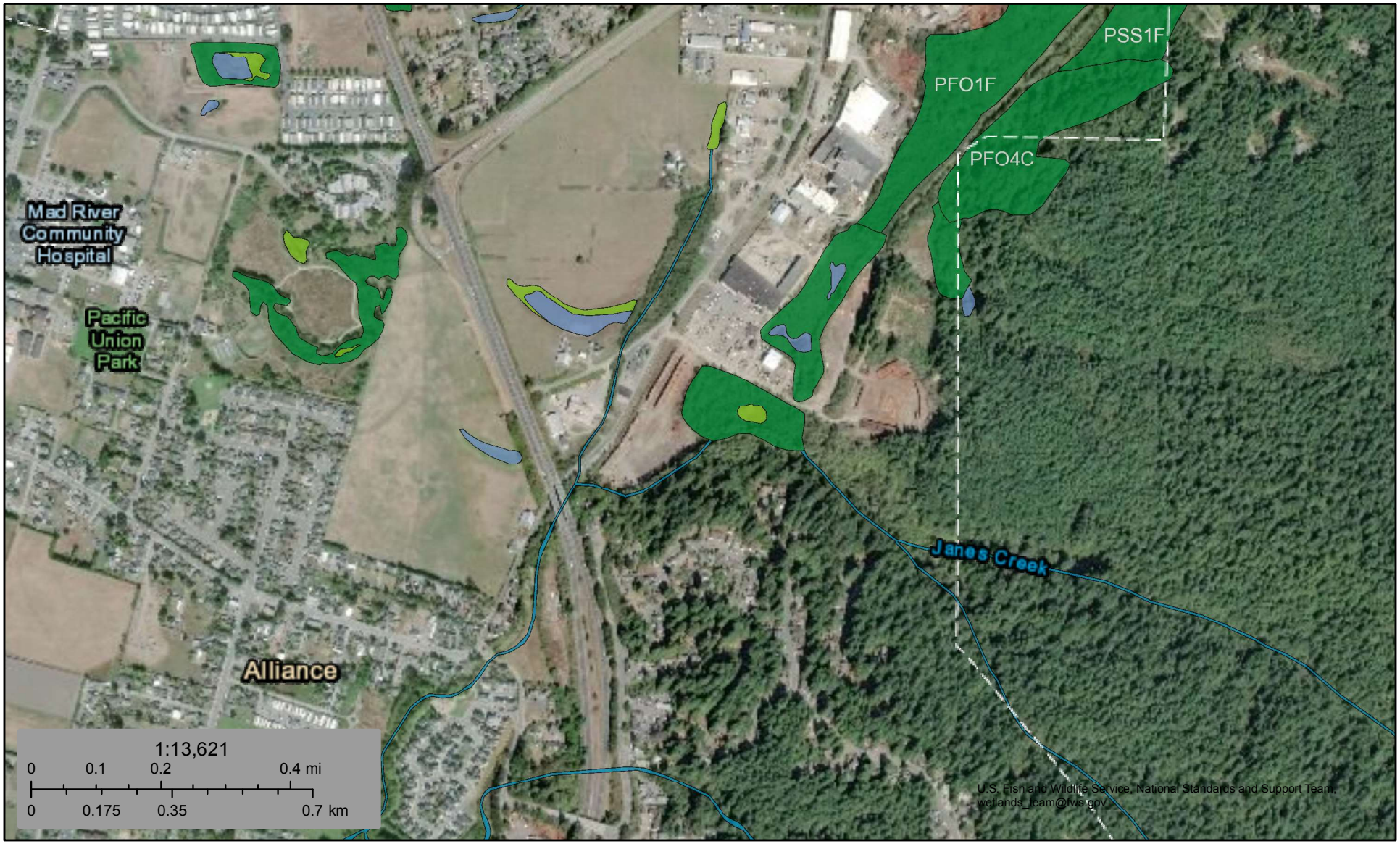
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

U.S. Fish and Wildlife Service
National Wetlands Inventory

A+M Arcata Mid NWI



November 26, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

U.S. Fish and Wildlife Service
National Wetlands Inventory

A+M Arcata North NWI

November 26, 2018

Wetlands

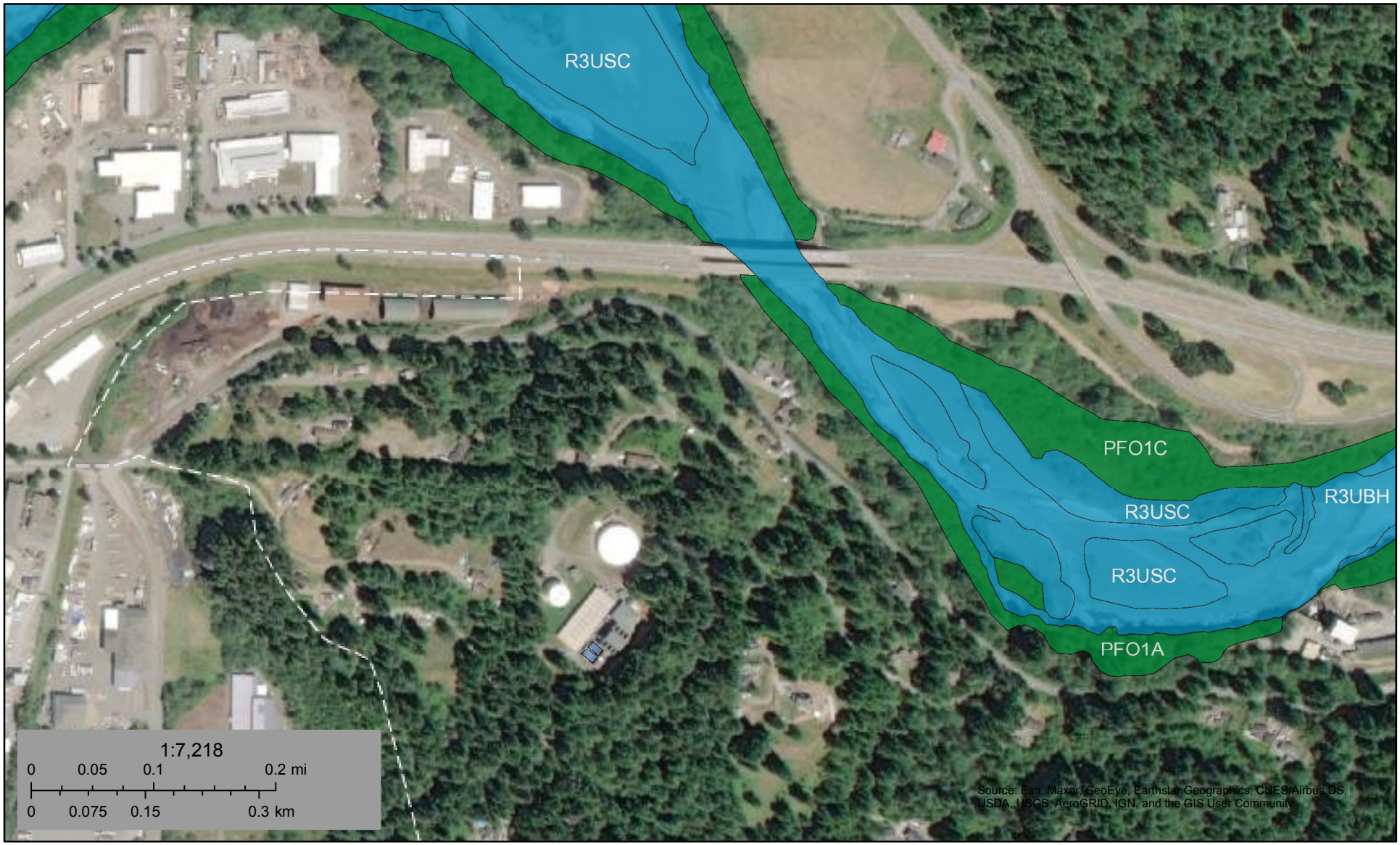
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

U.S. Fish and Wildlife Service

National Wetlands Inventory

A+M Arcata N of West End Rd



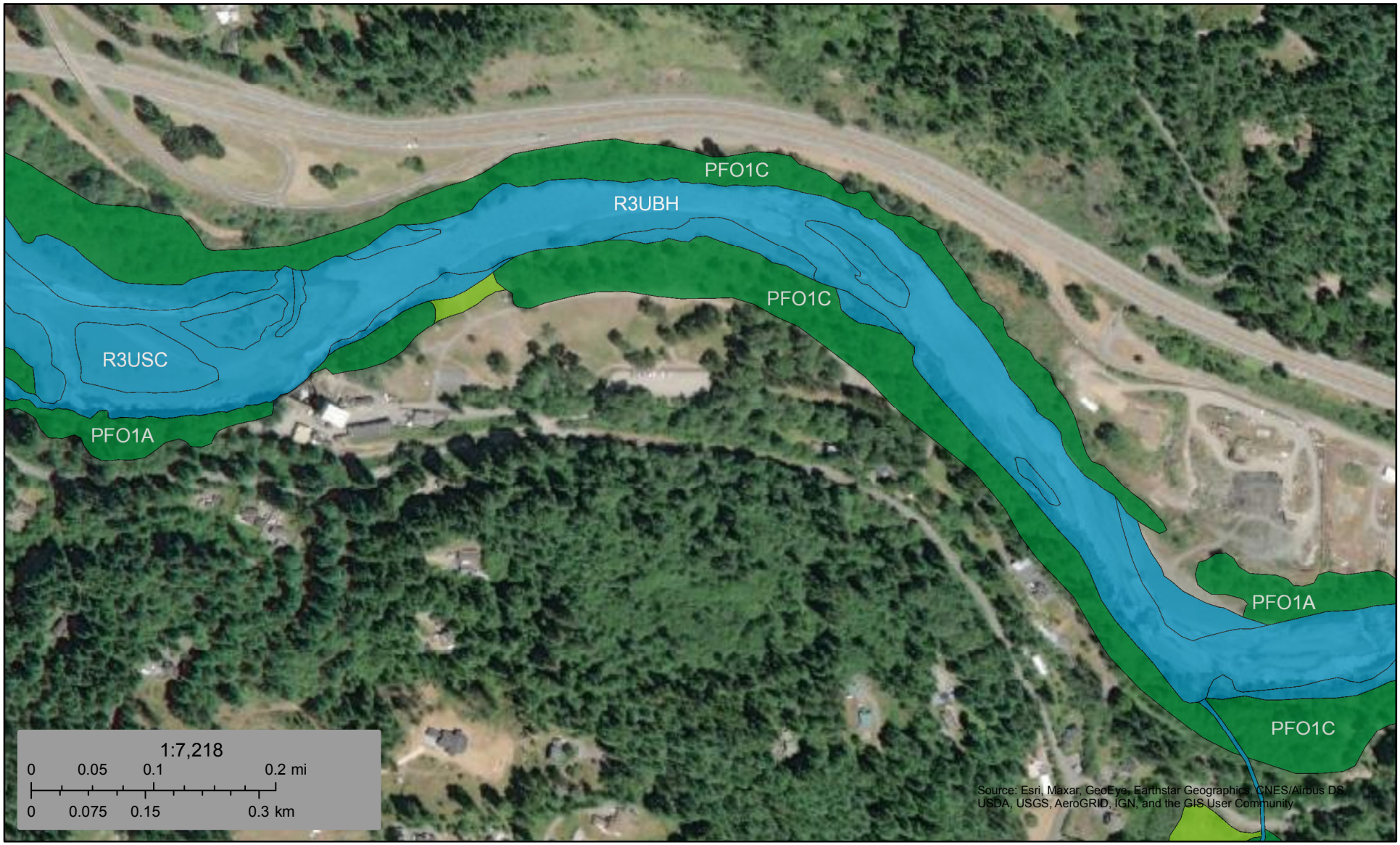
February 3, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

U.S. Fish and Wildlife Service
National Wetlands Inventory

A+M Arcata Park 1 NWI



February 3, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Appendix G

30% Designs (Attached Separately)