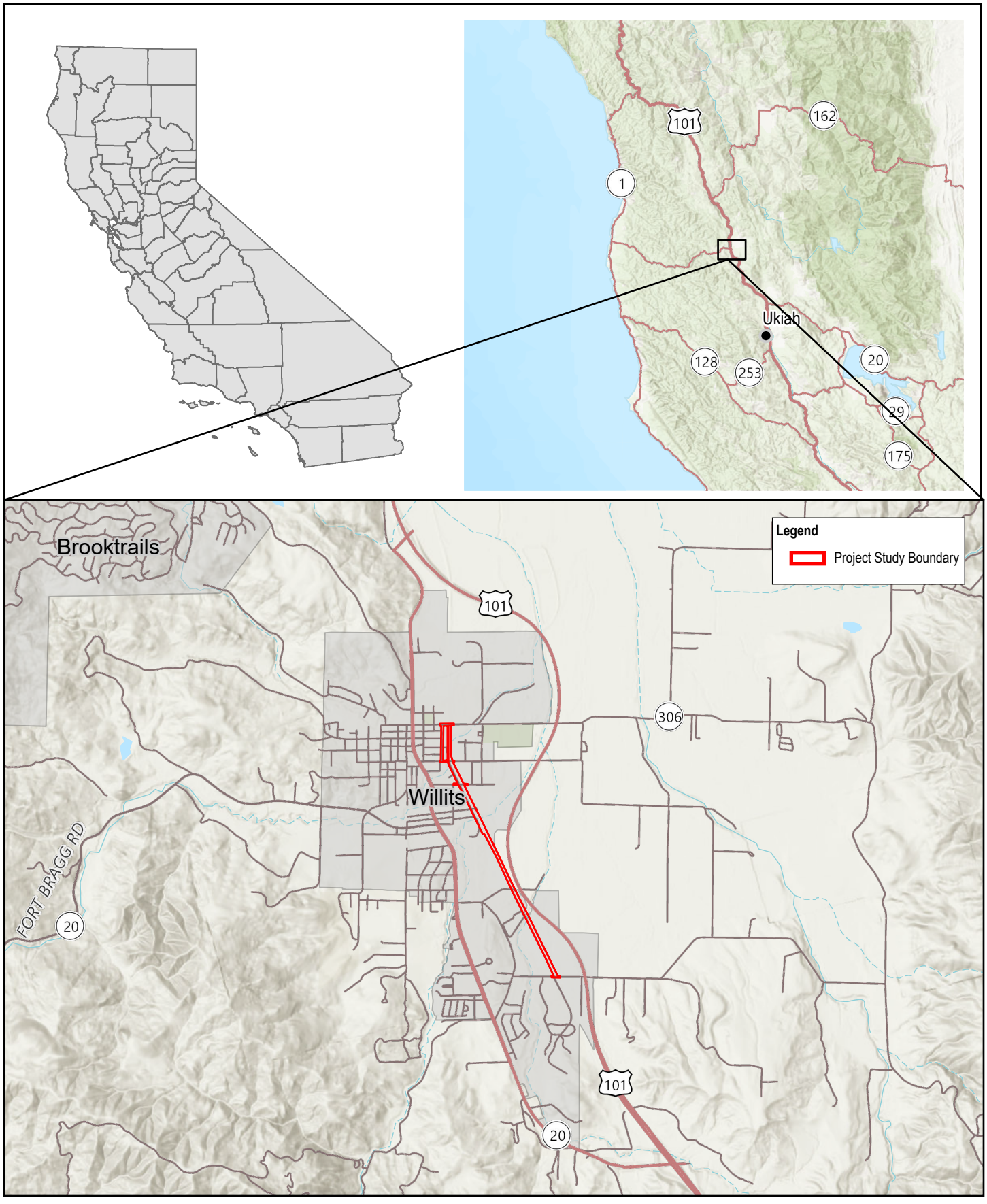
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Figure 2-A - 2-D	Study Boundary Overview
Figure 3-A - 3-D	FEMA Flood Zones
Figure 4-A - 4-D	Alignment Scenarios
Figure 5-A - 4-D	Aquatic Resources Delineation
Figure 6-A - 6-D	Vegetation Map
Figure 7	Potential Offsite Mitigation Properties



Paper Size ANSI A

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Map Projection: Lambert Conformal Conic
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Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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City of Willits
Willits Rail Trail Project

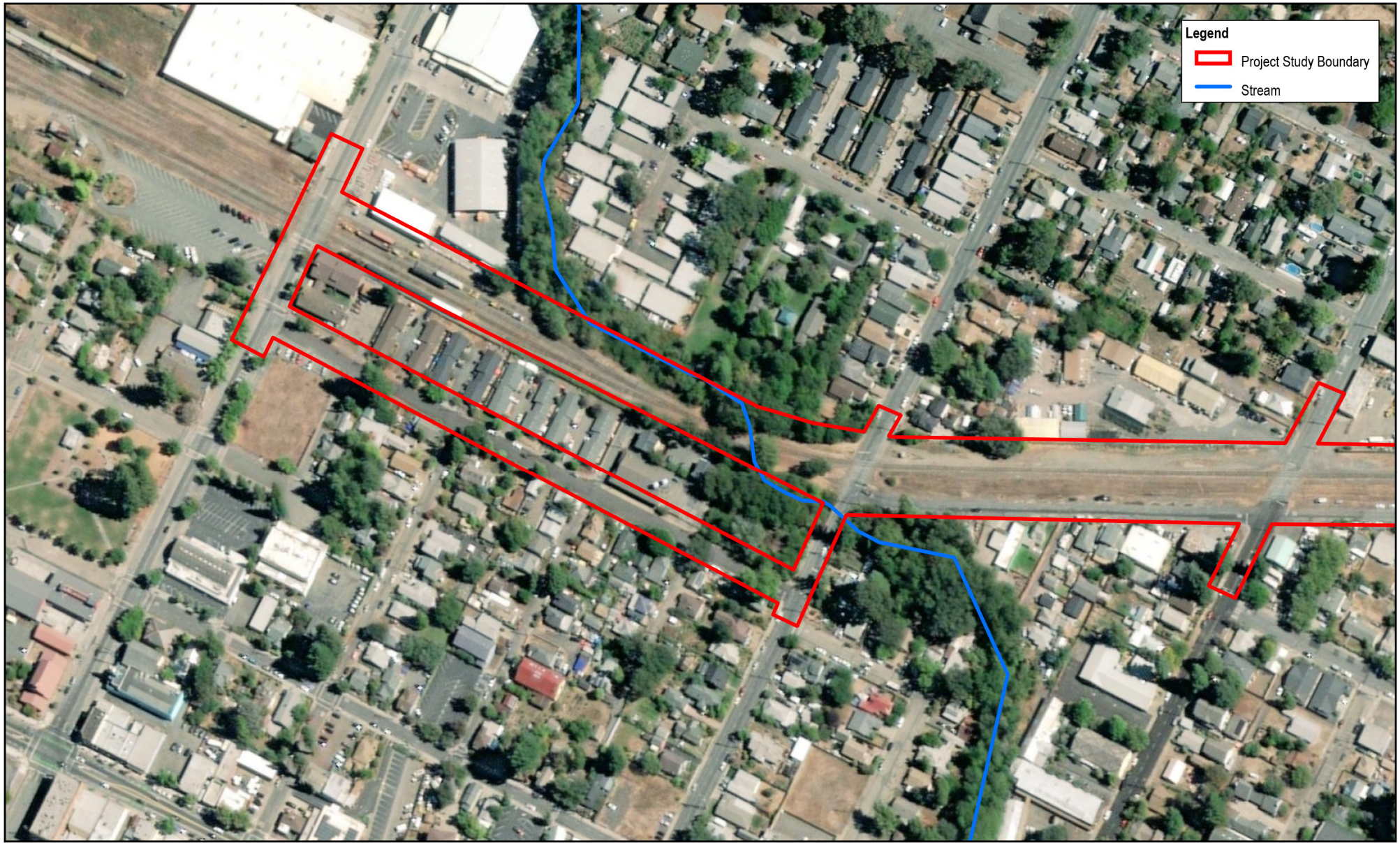
Project No. 11230579
Revision No. -
Date 1/10/2022

Vicinity Map

FIGURE 1

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

Study Boundary Overview

FIGURE 2-A

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Data source: World Imagery: Maxar, Microsoft. Created by: ethompson3



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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

Study Boundary Overview

FIGURE 2-B

\\ghdnet\ghd\US\Santa Rosa\Projects\661\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_002B_StudyBoundaryMB
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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

Study Boundary Overview

FIGURE 2-C

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City of Willits
Willits Rail Trail Project

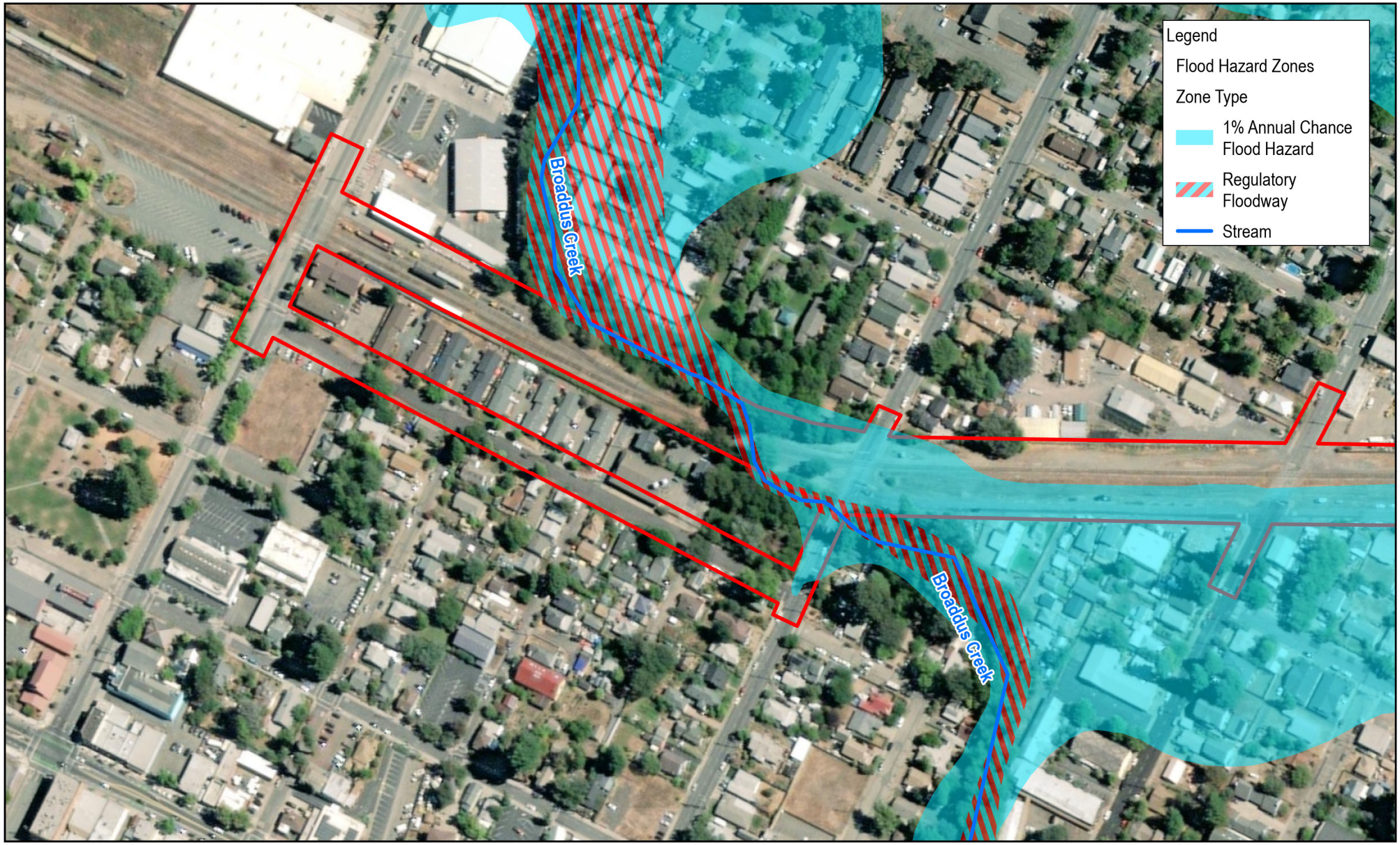
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Revision No. **-**
Date **1/31/2022**

Study Boundary Overview

FIGURE 2-D

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City of Willits
Willits Rail Trail Project

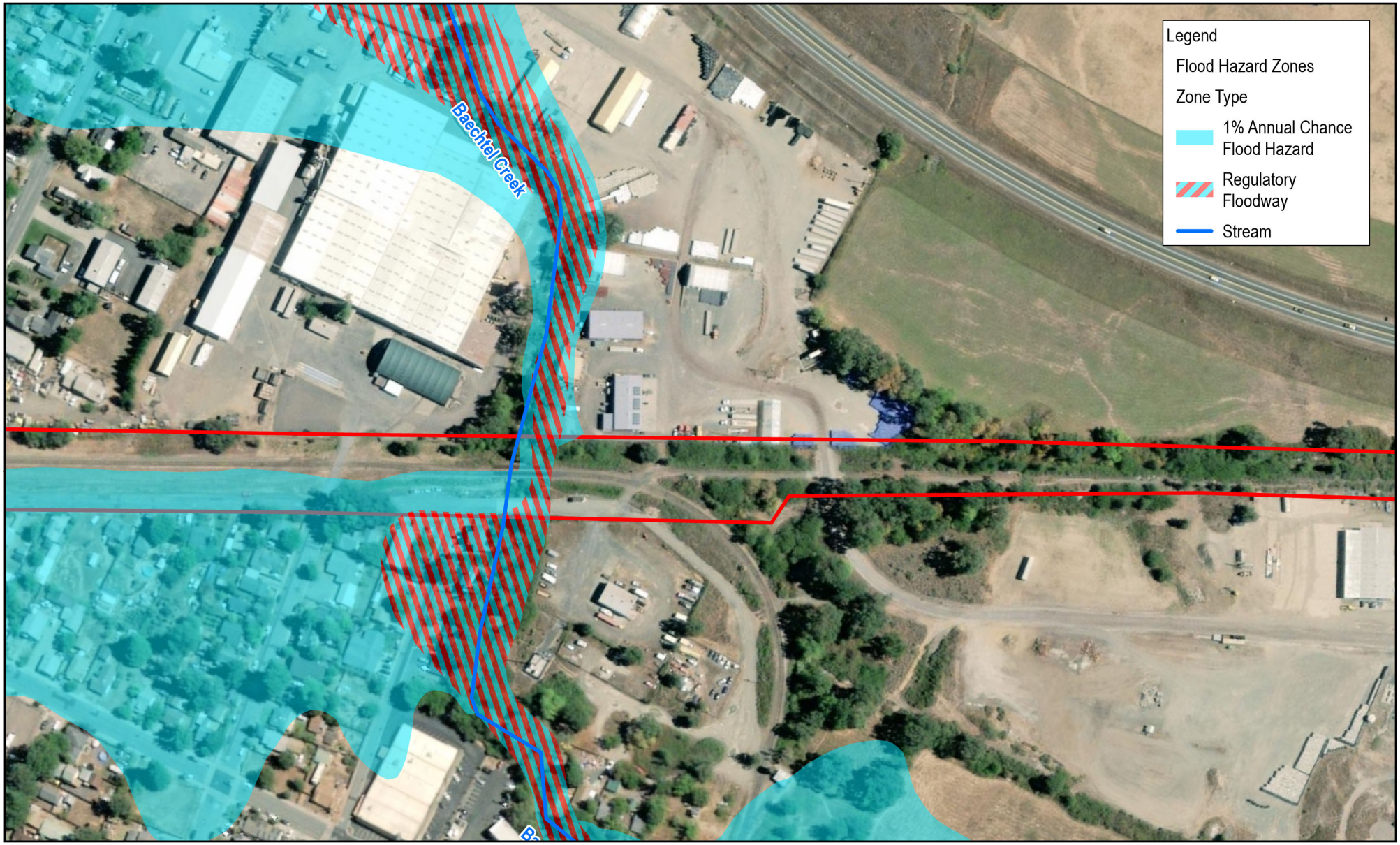
FEMA Flood Zones

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

FIGURE 3-A

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

FEMA Flood Zones

FIGURE 3-B

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

FEMA Flood Zones

FIGURE 3-C

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City of Willits
Willits Rail Trail Project

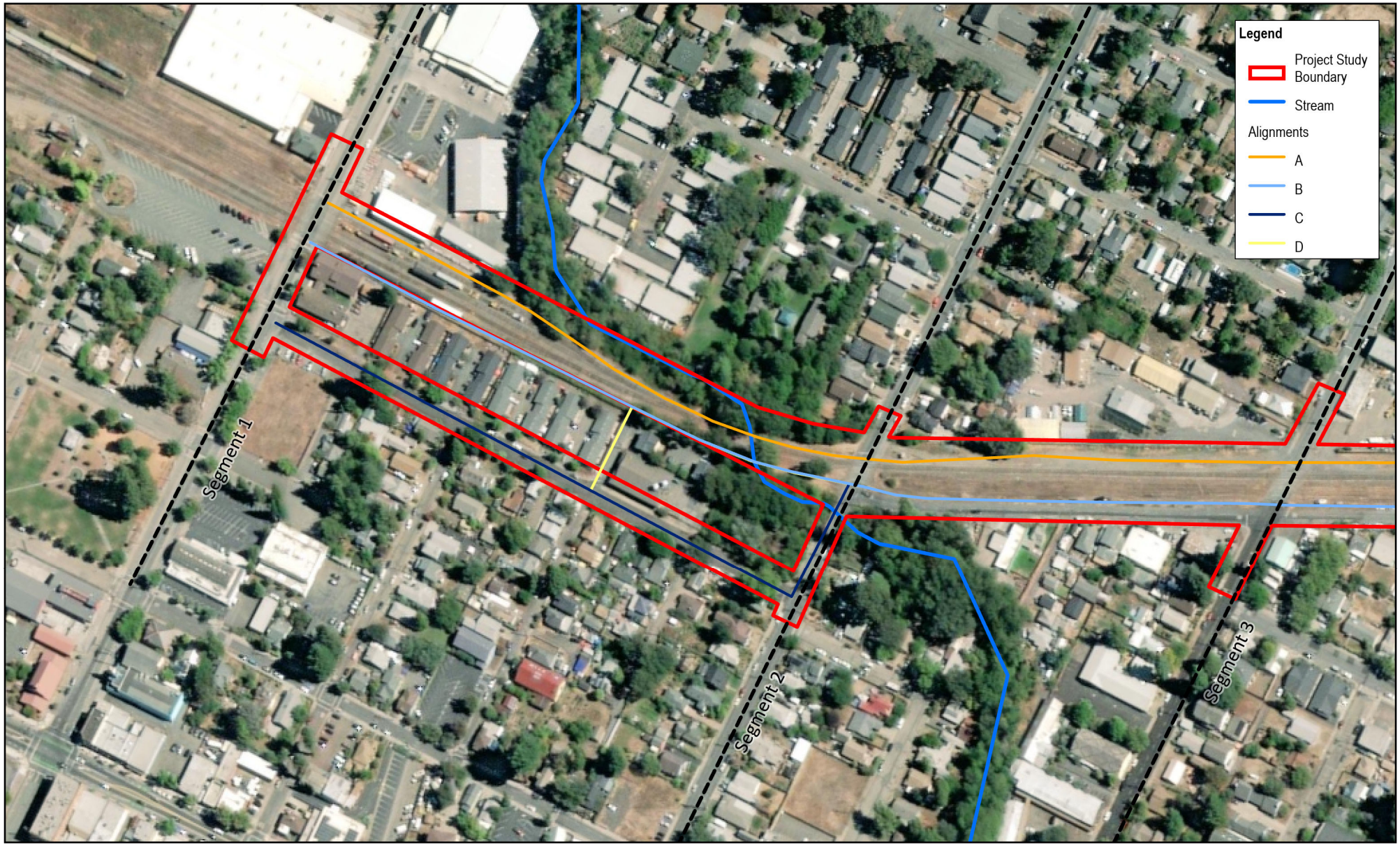
FEMA Flood Zones

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

FIGURE 3-D

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City of Willits
Willits Rail Trail Project

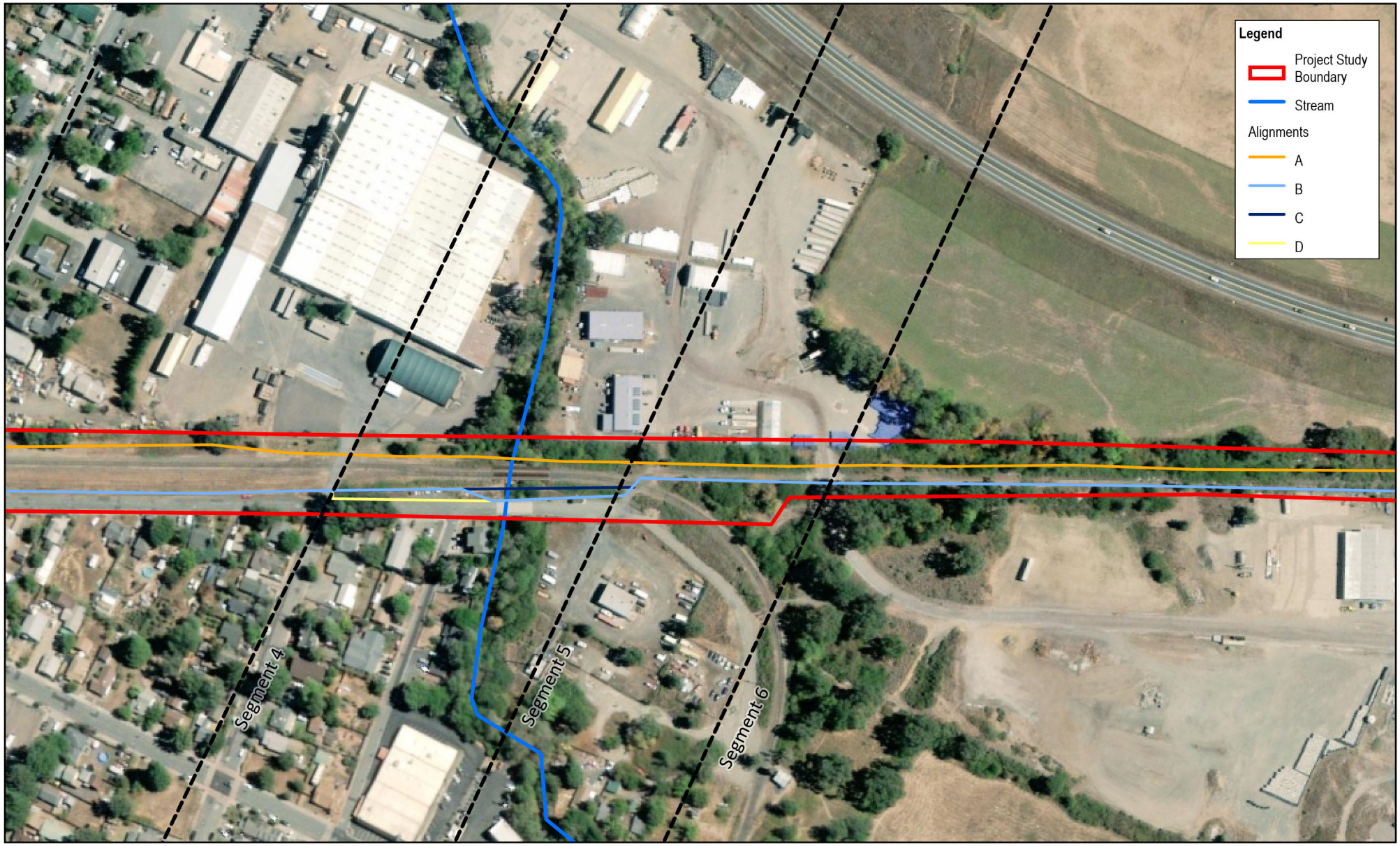
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Alignment Scenarios

FIGURE 4-A

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **2/16/2022**

Alignment Scenarios

FIGURE 4-B

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City of Willits
Willits Rail Trail Project

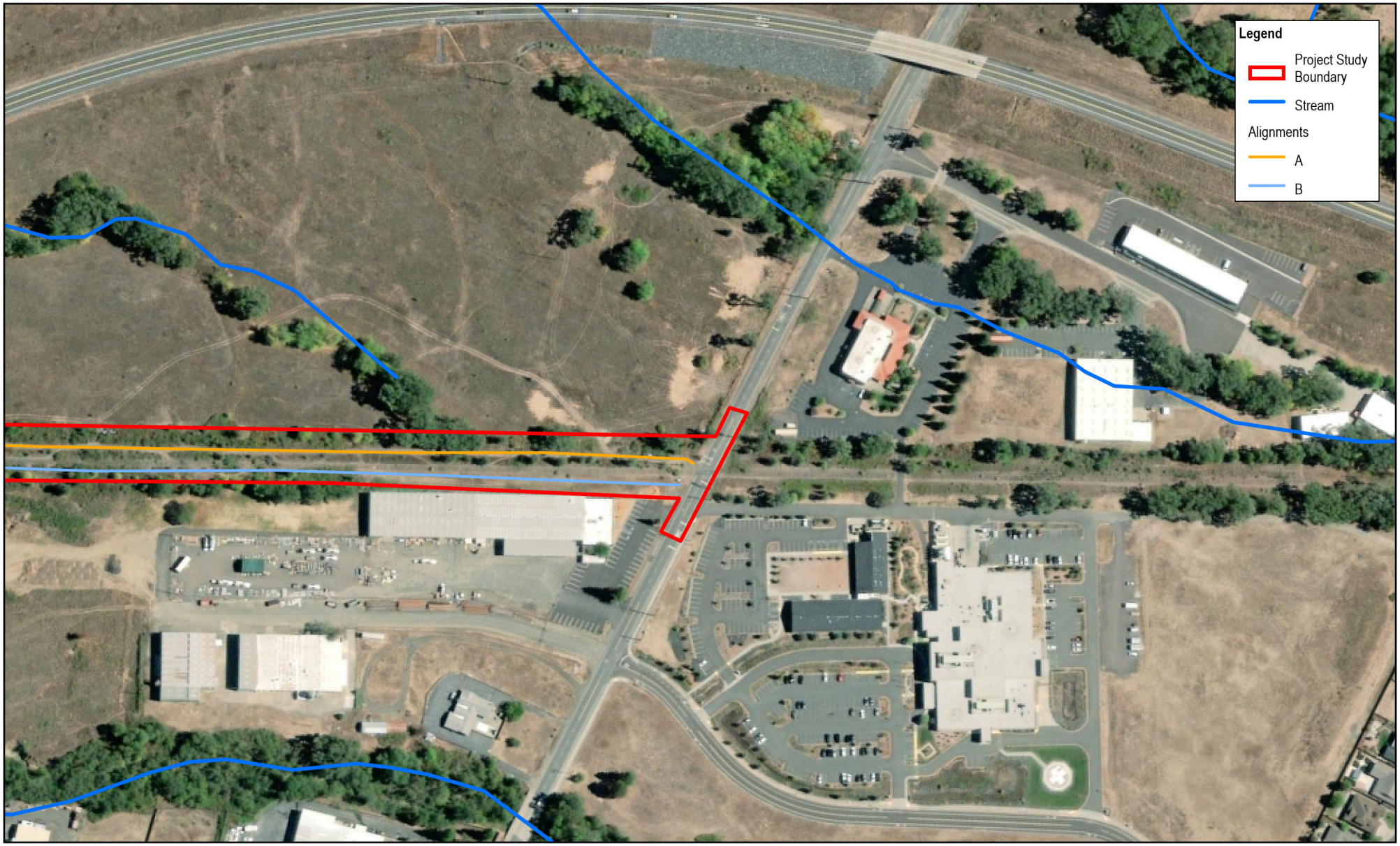
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Revision No. **-**
Date **2/16/2022**

Alignment Scenarios

FIGURE 4-C

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City of Willits
Willits Rail Trail Project

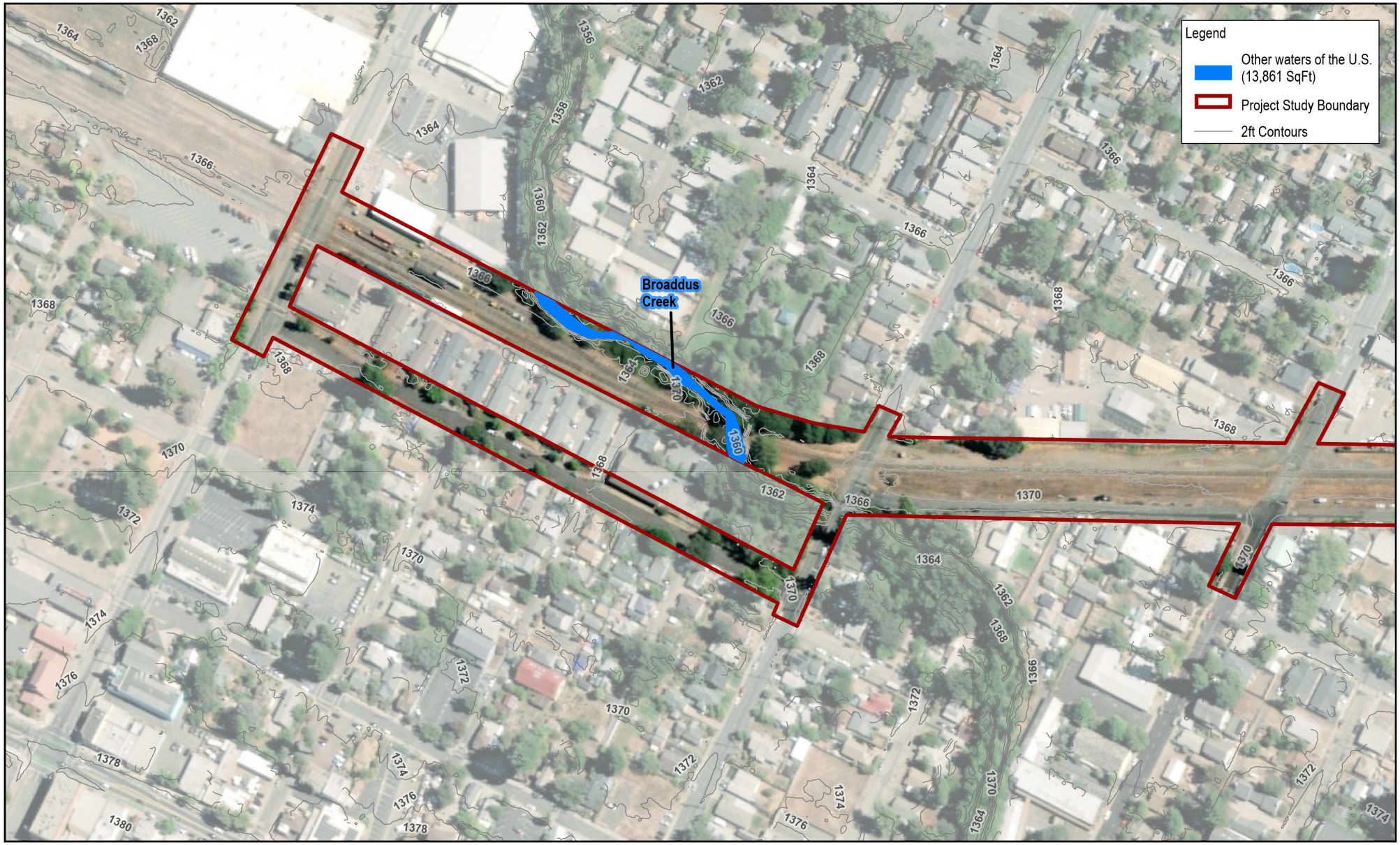
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Alignment Scenarios

FIGURE 4-D

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City of Willits
Willits Rail Trail Project

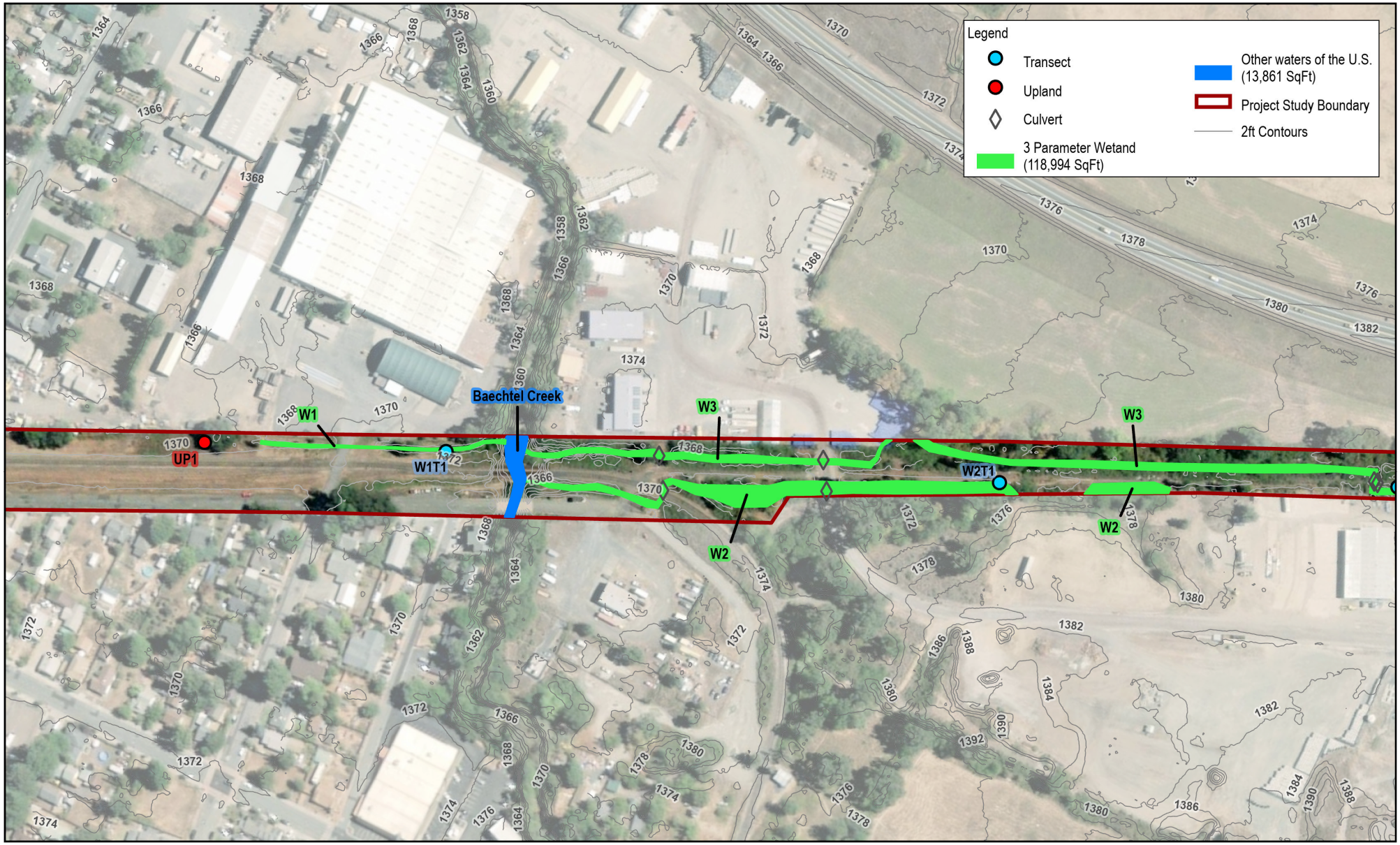
Aquatic Resources Delineation Map

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

FIGURE 5-A

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Paper Size ANSI A

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City of Willits
Willits Rail Trail Project

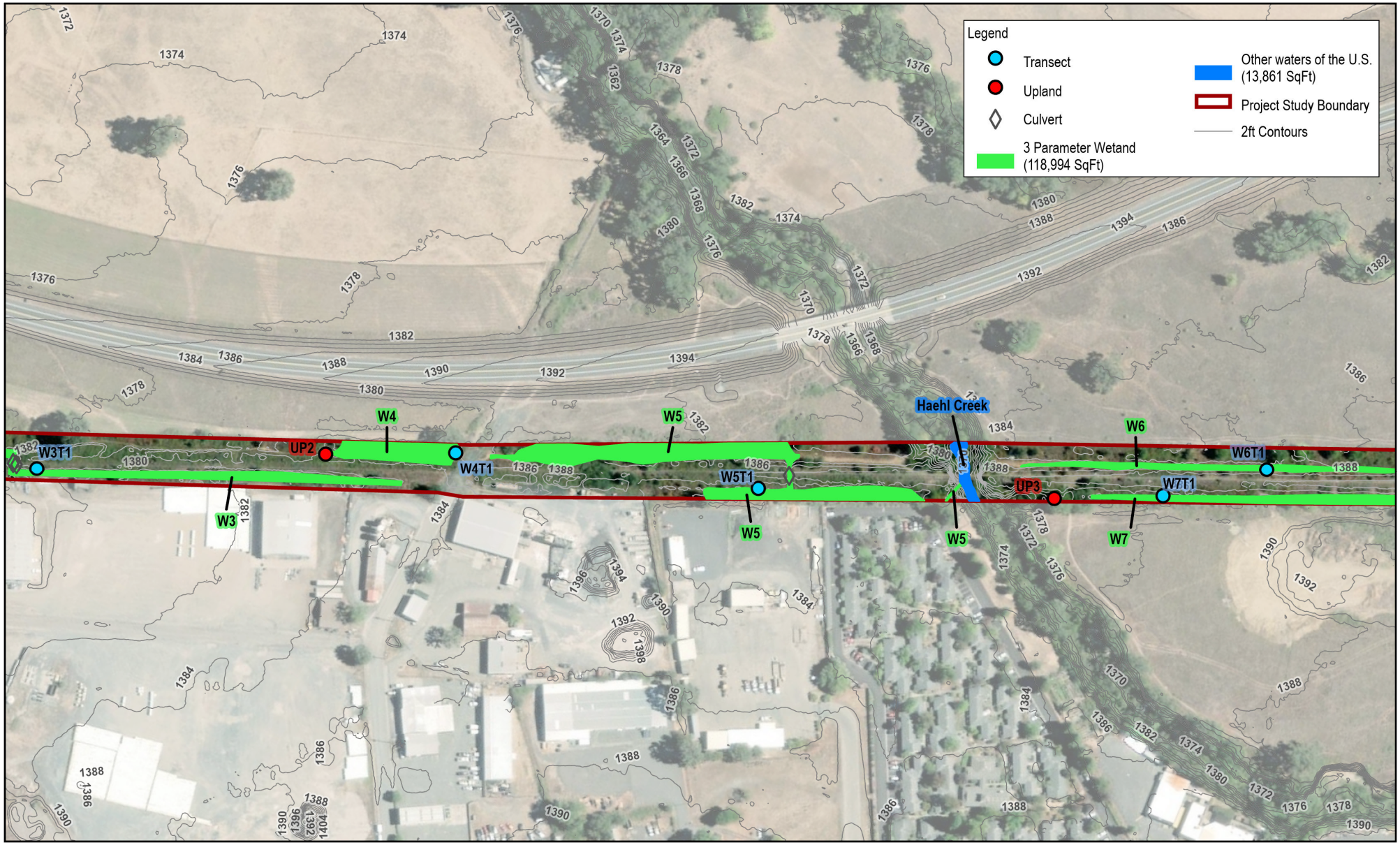
Aquatic Resources Delineation Map

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

FIGURE 5-B

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Paper Size ANSI A

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City of Willits
Willits Rail Trail Project

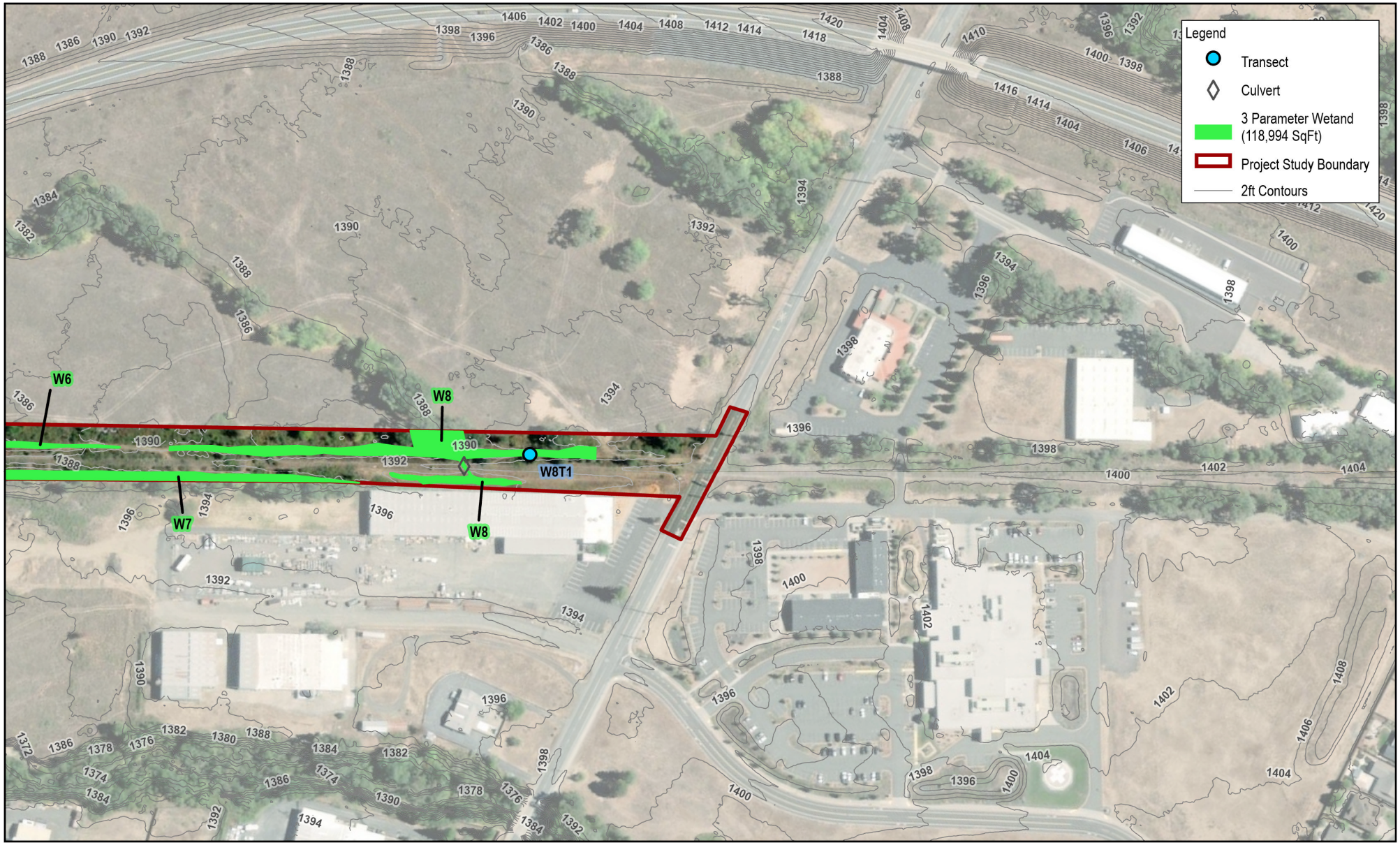
Aquatic Resources Delineation Map

Project No. **11230579**
Revision No. **-**
Date **1/31/2022**

FIGURE 5-C

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City of Willits
Willits Rail Trail Project

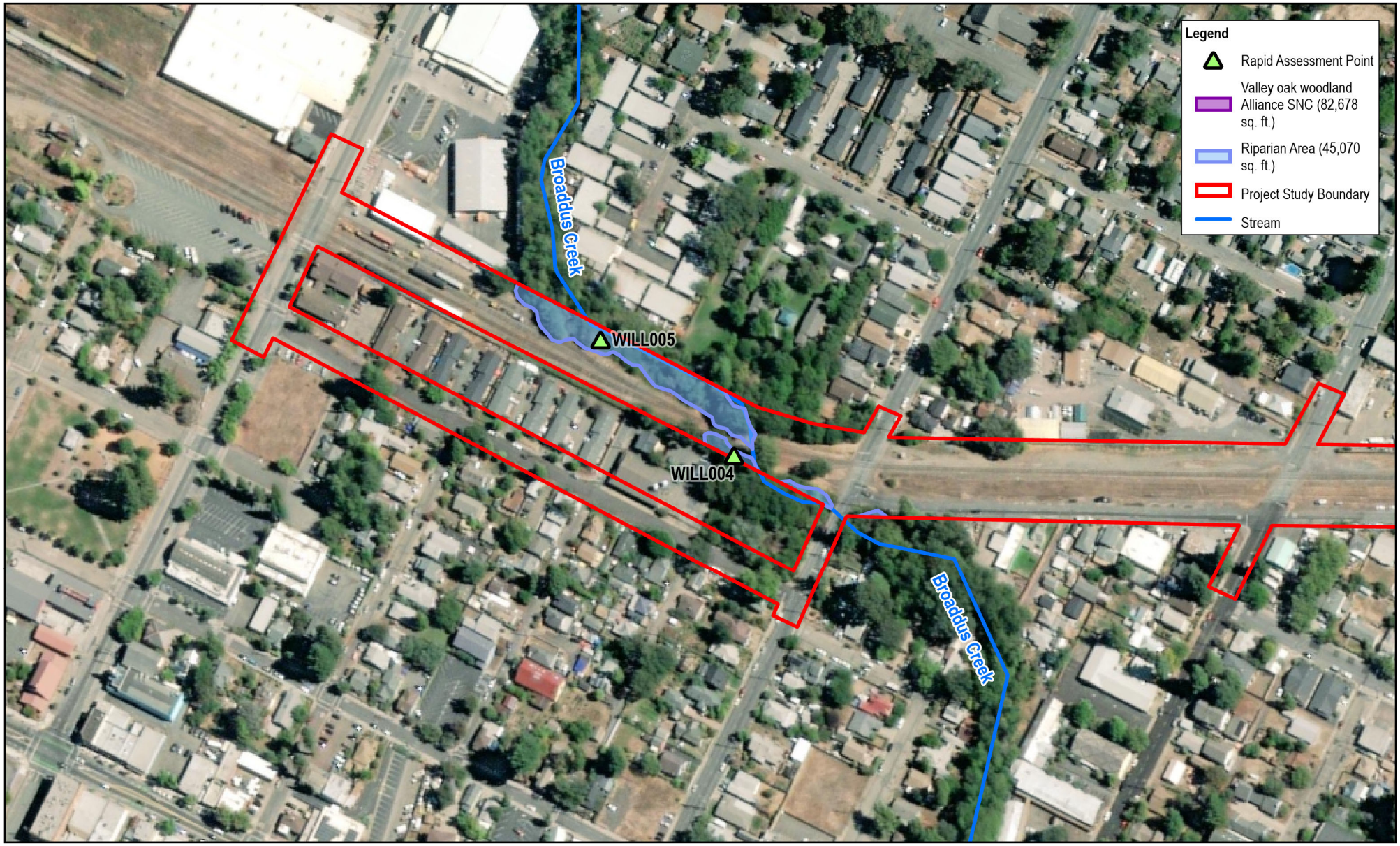
Aquatic Resources Delineation Map

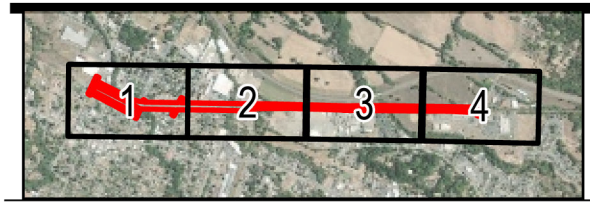
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Revision No. **-**
Date **1/31/2022**

FIGURE 5-D

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Paper Size ANSI A

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City of Willits
Willits Rail Trail Project

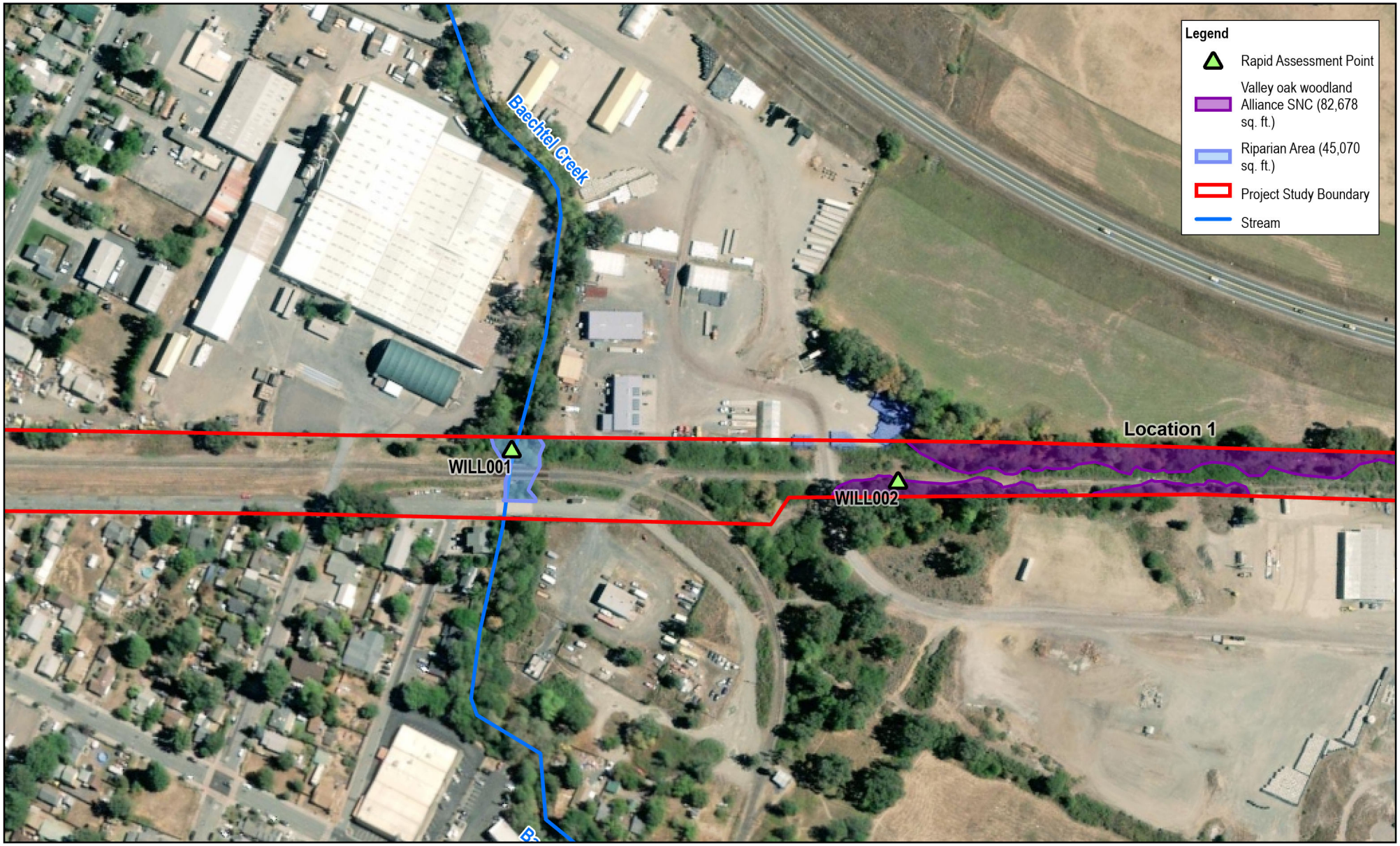
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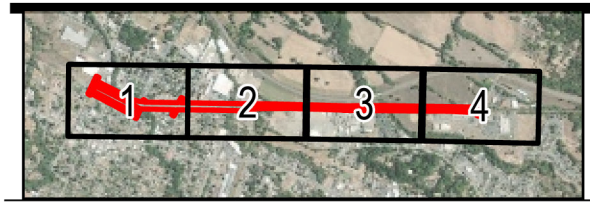
Vegetation Map

FIGURE 6-A

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Data source: World Imagery: Maxar, Microsoft
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Road Names: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA. Created by: ethompson3





Paper Size ANSI A

0 75 150 225 300

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **2/16/2022**

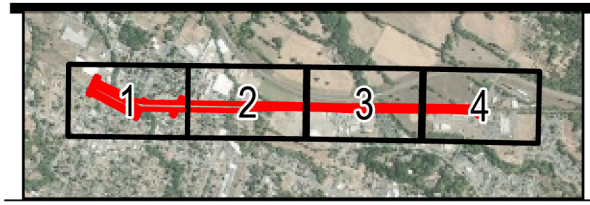
Vegetation Map

FIGURE 6-B

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Paper Size ANSI A

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Feet

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City of Willits
Willits Rail Trail Project

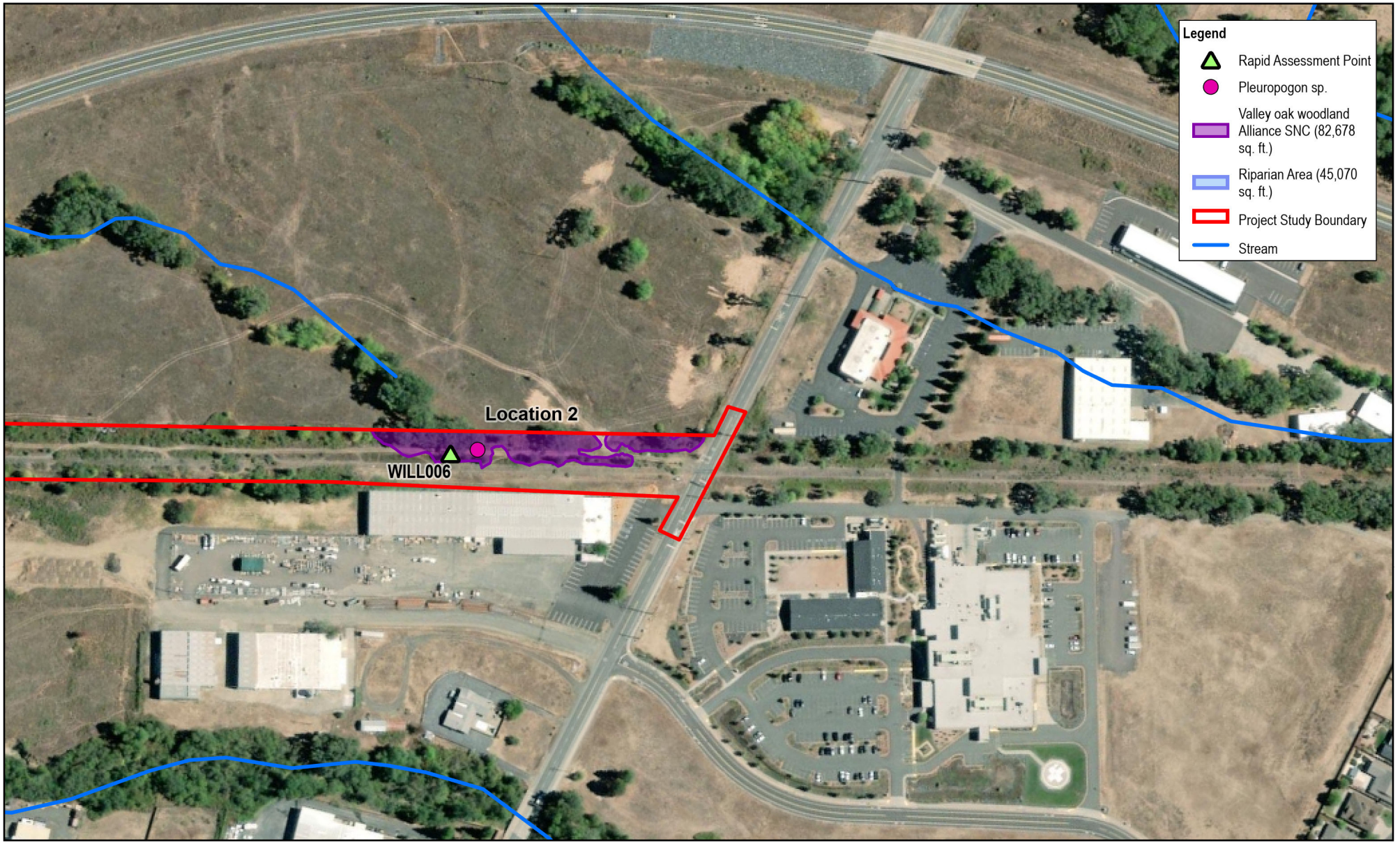
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Date **2/16/2022**

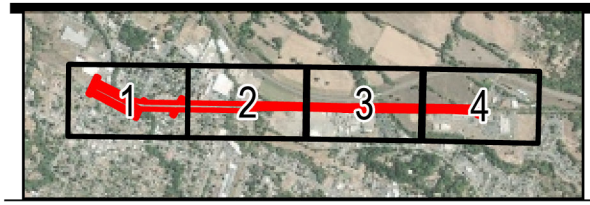
Vegetation Map

FIGURE 6-C

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Paper Size ANSI A

0 75 150 225 300

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **2/16/2022**

Vegetation Map

FIGURE 6-D

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_003_Veg
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Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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City of Willits
Willits Rail Trail Project

Potential Offsite Mitigation Properties

Project No. **11230579**
Revision No. **-**
Date **3/17/2022**

FIGURE 7

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_07_MitiLand
Print date: 17 Mar 2022 - 15:11

Data source: World Imagery: Maxar. Created by: ethompson3

Appendix B

Biological Resources Report

Biological Resources Report

Willits Rail with Trail Project

City of Willits

October 25, 2021



Biological Resources Report
Willits Rail with Trail Project

This document has been prepared for:

City of Willits
111 E. Commercial Street
Willits, CA 95490 USA

By:

GHD

718 Third Street
Eureka, CA 95501, United States
T 707 443 8326 | **E** matt.wargula@ghd.com | **ghd.com**

October 25, 2021

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Acronyms and Abbreviations

BRE	Biological Resources Evaluation
CCC or Commission	California Coastal Commission
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
FGC	California Fish and Game Code
Cal OES	California Governor's Office of Emergency Services
MBPA	California Migratory Bird Protection Act
CNPS	California Native Plant Society's
CNDDB	California Natural Diversity Database
CRPR	California Rare Plant Ranking
CWA	Clean Water Act
ESA	Endangered Species Act
ESHA	Environmentally Sensitive Habitat Area
FEMA	Federal Emergency Management Agency
HCPs	Habitat Conservation Plans
HMG	Hazard Mitigation Grant
HBAP	Humboldt Bay Area Plan
HBMWD	Humboldt Bay Municipal Water District
IPaC	Information for Planning and Conservation
LCP	Local Coastal Program
LCPs	local coastal programs
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NWI	National Wetlands Inventory
NPPA	Native Plant Protection Act
NCCP	Natural Community Conservation Planning
Other Waters	Other waters of the United States and or State of California
PSB	Project Study Boundary
RWQCBs	Regional Water Quality Control Boards
ESHA	Sensitive Natural Communities and Environmentally Sensitive Habitat Area
USACE	U.S. Army Corps of Engineers
EPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey

1. Introduction

The purpose of this Biological Resources Report (BRR) is to investigate and determine which sensitive biological resources (if any), including plant and wildlife species and their habitat, may occur in the footprint or vicinity of the Willits Rail with Trail Project (hereafter "Project," described below). Species listed as endangered or threatened under the federal or state Endangered Species Act (ESA and CESA respectively) or their designated critical habitat, as well as California special status species and habitats, are the primary focus of this BRR. Common species without special protections are not considered in this BRR. The purpose of the BRR is to inform CEQA analysis and Project permit applications.

1.1 Project Purpose and Goals

Within the City, current conditions along the Main Street/State Route 20 corridor are not favorable for active transportation users, with average speeds above posted speed limits and traffic volumes of 13,700 vehicles per day. Existing pedestrian facilities suffer from numerous cracks and uneven concrete. Pedestrians must navigate around streetlights, utility poles, and street signs throughout the entire corridor. Bicycle facilities are limited throughout the corridor, forcing bicyclists to ride in traffic or on sidewalks. The Willits Rail with Trail Project will construct a dedicated Class 1 bicycle and pedestrian facility that will provide a safe, Americans with Disabilities Act (ADA) compliant route for all active transportation users. As a benefit of the trail, the number of walking and bicycle trips, public health, safety, and mobility will increase. Greenhouse gases would be reduced via vehicular trip replacement.

2. Project Description

2.1 Proposed Project

The Project would construct an approximately 1.6-mile Class I bike trail (pedestrian and bicycle trail) from East Commercial Street to East Hill Road within the North Coast Railroad Authority (NCRA) right of way, within the City limits. Installation of this 1.6-mile trail would improve access and safety for pedestrian and bicycle users as well as create opportunities for nature study and recreation. The trail would provide a connection between the southern and the northern parts of the City, and it would be accessible to the residents that live and work in Willits. Furthermore, the trail would eventually provide linkages beyond the City into other parts of Mendocino County, the City of Ukiah, and beyond as part of the proposed Great Redwood Trail, which is planned to span between Eureka and the north San Francisco Bay Area. The proposed trail would also connect to the Haehl Creek Trail, located near the Frank R. Howard Memorial Hospital.

The trail would be a paved pathway Class I facility, an approximately ten-feet wide trail (five feet per travel lane) with two-foot shoulders. The trail may be narrowed in limited locations where unavoidable site constraints exist. The trail would be separated from the railroad and adjacent private property by a fence. The trail would be a minimum of ten feet from the railroad to meet NCRA design standards. The trail would include new bridge crossings over three creeks – Broaddus Creek, Baechtel Creek, and Haehl Creek.

It is assumed the railroad will remain active, with minimal levels of activity primarily associated with the Skunk Train excursion tours. The Project would not conflict with the Skunk Train excursion trails or other railroad use. Small areas of inactive track may be removed, primarily associated with grade crossings or inactive spurs. Existing street crossings may be enhanced with *California Manual on Uniform Traffic Control*

Devices (CA MUTCD) standards, such as with LED signs. Signage and markings at public street crossings would be updated as required by the California Public Utilities Commission (CPUC). Railroad crossings within City-street crossings would remain unaltered, except when providing connections to existing pedestrian facilities (including curb, gutter and sidewalk) located adjacent to the trail.

The Project would be designed in accordance with NCRA design standards and the Caltrans *Highway Design Manual, 7th Edition* (2020). In addition, the Project would be designed in accordance with other specific applicable standards, including the 2010 Americans with Disabilities Act Standards for Accessible Design and CA MUTCD standards.

2.2 Definition of the Project Study Boundary

The Project Study Boundary (PSB) is considered the area of ground disturbance necessary to implement the Project and equates to 25.8 acres. For the purposes of this BRR, the Biological Study Area (BSA) includes the PSB and a circular buffer of 0.20 miles (radius). State special status wildlife species were evaluated at the level of the PSB. This large buffer around the PSB is designed to account for any auditory and visual disturbance to wildlife or other resources, as well as other potential impacts such as increased sedimentation and turbidity from construction or increased dust. See **Appendix A Figures 2,** and **2-1 through 2-4** for a map of the PSB, and **Figure 3** for a map of the BSA buffer.

2.3 Construction Schedule

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

2.4 Other Public Agencies Whose Approval is Required

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

– California Environmental Quality Act (CEQA) Initial Study/Proposed Mitigated Negative Declaration, with the City of Willits as the lead agency;
– Section 404 of the Clean Water Act (CWA) Individual Permit from the U.S. Army Corps of Engineers (USACE) for impacts to regulated Waters, including wetlands;
– Section 401 of the CWA Water Quality Certification from the North Coast Regional Water Quality Control Board for impacts to regulated Waters, including wetlands;
– Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW) for impacts to riparian habitat along the creek margins during bridge installation;
– Formal or informal consultation with CDFW for impacts to California Endangered Species Act (CESA)-listed species for impacts to Waters which provide habitat for listed species, and potentially for North Coast semaphore grass;
– Formal or informal consultation with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act for impacts to Waters which provide habitat for listed species.

The Project is not expected to require consultation with the U.S. Fish and Wildlife Service (USFWS), as potential impacts to federal special status plants or wildlife species under their jurisdiction are not anticipated. Given the lack of federal funds supporting the Project, NEPA is not required.

3. Regulatory Background

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

3.1 Federal Jurisdiction

National Environmental Policy Act

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

Endangered Species Act

The ESA of 1973 (16 United States Code [USC] 1531 et seq.) establishes a national policy that all federal departments and agencies provide for the conservation of threatened and endangered species and their ecosystems. The Secretary of the Interior and the Secretary of Commerce are designated in the ESA as responsible for: (1) maintaining a list of species likely to become endangered within the foreseeable future throughout all or a significant portion of its range (threatened) and that are currently in danger of extinction throughout all or a significant portion of its range (endangered); (2) carrying out programs for the conservation of these species; and (3) rendering opinions regarding the impact of proposed federal actions on listed species. The ESA also outlines what constitutes unlawful taking, importation, sale, and possession of listed species and specifies civil and criminal penalties for unlawful activities.

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

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

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

Habitat Conservation Plans (HCPs)

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

Habitat Conservation Plans That Overlap the Project

The PSB and BSA do not overlap any existing active or proposed HCPs according to a current list from the USFW ECOS website (USFWS 2021), and the CDFW list of HCPs and Natural Community Conservation Planning (NCCP)s (CDFW 2021a).

Executive Order 13112, Invasive Species

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

Migratory Bird Treaty Act (MBTA)

The MBTA of 1918 (16 USC 703-712) as amended established federal responsibilities for the protection of nearly all species of birds, their eggs, and nests. A migratory bird is defined as any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. The MBTA prohibits the take, possession, buying, selling, purchasing, or bartering of any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Only exotic species such as Rock Pigeons (*Columba livia*), House Sparrows (*Passer domesticus*), and European Starlings (*Sturnus vulgaris*) are exempt from protection.

Clean Water Act (CWA)

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

Discharge of fill material into “waters of the U.S.,” including wetlands, is regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the CWA (33 USC 1251-1376). USACE regulations implementing Section 404 define “waters of the U.S.” to include intrastate waters (such as, lakes, rivers, streams, wetlands, and natural ponds) that the use, degradation, or destruction of could affect interstate or foreign commerce. Wetlands are defined for regulatory purposes as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3; 40 CFR 230.3). The placement of structures in “navigable waters of the U.S.” is also regulated by the USACE under Section 10 of the Federal Rivers and Harbors Act (33 USC 401 et seq.). Projects are approved by USACE under standard (i.e., individual) or general (i.e., nationwide, programmatic, or regional) permits. The type of permit is determined by the USACE and based on project parameters.

The Fish and Wildlife Coordination Act requires consultation with the USFWS, NOAA Fisheries, and responsible state wildlife agency for any federally authorized action to control or modify surface waters. Therefore, any project proposed or permitted by the USACE under the CWA Section 404 must also be reviewed by the federal wildlife agencies and CDFW.

Section 401 of the CWA requires any applicant for a federal license or permit, which involves an activity that may result in a discharge of a pollutant into waters of the U.S., obtain a certification that the discharge will comply with applicable effluent limitations and water quality standards. CWA 401 certifications are issued by Regional Water Quality Control Boards (RWQCBs) under the California Environmental Protection Agency.

Executive Order 11990

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

Bald and Golden Eagle Protection Act (BGEPA)

The Bald Eagle Protection Act was originally enacted in 1940 in order to protect the national emblem of the United States, the Bald Eagle (Haliaeetus leucocephalus). At this time, the Bald Eagle was experiencing significant population pressures from hunting, egg collection, and habitat loss (Buehler 2020). This act was expanded upon in 1962 to include protections for the Golden Eagle (Aquila chrysaetos). Similarly, the Golden Eagle was also experiencing precipitous population declines due to habitat loss, hunting, and electrocution from power lines (Kochert et al. 2002).

The current federal statute as amended (16 U.S.C. 668-668d) includes criminal penalties for anyone, including individuals, associations, partnerships, and corporations who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or in any manner any bald eagle commonly known as the American eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof” without a permit (16 U.S.C. § 668a). “Take” is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb” (16 U.S.C. § 668c). “Disturb” is defined as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (50 CFR 22.3). Broadly construed, “take” may be applied to the protection of habitat around nest sites (Wisch 2002). Civil and criminal penalties may include monetary fines, imprisonment, a cancellation of grazing agreements on federal land, and a loss of property that was used in violating the act (e.g., boat, gun, or car). According to the USFWS, “a violation of the Act can result in a fine of up to $100,000 ($200,000 for organizations), imprisonment for one year, or both, for a first offense. Penalties increase substantially for additional offenses, and a second violation of this Act is a felony” (USFWS 2016a). However, the act allows for Bureau of Indian Affairs certified tribal members to use eagles and eagle parts for religious ceremonies, as well as exceptions for scientific or educational purposes, falconry, and in cases of livestock depredation (16 U.S.C. § 668a). Any employee of the Department of the Interior (DOI) may enforce the provisions of the statute and may arrest individuals for violations (16 U.S.C. § 668b).

In the case of development projects, a permit may be required if the project activity is near an active or inactive eagle nest, roosting site, or foraging site. This is particularly true if the project is near breeding habitat (as opposed to wintering habitat or migratory stop-over sites). The act applies to all activities that may impact eagles, including projects without a federal nexus. If there is a possibility that the project could “non-purposefully take” eagles (unavoidable take associated with, but not the purpose of an activity) the USFWS may issue a programmatic take permit. In this case, the permit is subject to conditions or mitigation measures to minimize impacts. Post-construction monitoring and annual reports may also be required (50 CFR 22.26).

Magnuson-Stevens Fishery Conservation and Management Act of 1976 (as amended)

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (16 U.S.C. 1801 et seq.) provides the federal government with the authority to manage fisheries in the U.S. Exclusive Economic Zone (EEZ) (from state waters which end three nautical miles offshore to a distance of 200 nautical miles). In addition, the Act mandates inter-agency cooperation in achieving protection, conservation, and enhancement of Essential Fish Habitat (EFH). The Act defines EFH as "Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. For the purpose of interpreting the definition of EFH: 'waters' include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; 'substrate' includes sediment, hard bottom, structures underlying the waters, and associated biological communities; 'necessary' means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle" (50 CFR 600.10).

EFH guidelines also address Habitat Areas of Particular Concern (HAPCs) that should be evaluated within EFH. HAPCs may include both designated areas and designated habitat types. HAPCs are designated by the Fishery Management Council based on:

– “The importance of the ecological function provided by the habitat;
– The extent to which the habitat is sensitive to human-induced environmental degradation;
– Whether, and to what extent, development activities are or would be stressing the habitat type; and
– The rarity of the habitat type” (Pacific Fishery Management Council 2019).

EFH designations serve to highlight the importance of habitat conservation for sustainable fisheries and sustaining valuable fish populations. EFH relates directly to the physical fish habitat and indirectly to factors that contribute to degradation of this habitat. Important features of EFH that deserve attention are adequate water quality, temperature, food source, water depth, and cover/vegetation. Adverse effects to EFH are considered to be any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.10). Federal agencies are required to consult with NMFS regarding any actions (may include funding, permitting, or activities) that may adversely impact EFH.

Sustainable Fisheries Act of 1996

The Sustainable Fisheries Act (SFA) (Public Law 104-107) serves as an amendment to the MSFCMA to “authorize appropriations, to provide for sustainable fisheries, and for other purposes.” The SFA includes requirements for describing EFH in Fishery Management Plans (FMP) and also mandates the protection EFH. According to the SFA, “[o]ne of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats. Habitat considerations should receive increased attention for the conservation and management of fishery resources of the United States.” This act also mandates the delineation of EFH for all managed species.

3.2 State Jurisdiction

California Environmental Quality Act (CEQA)

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

Porter-Cologne Water Quality Act

The Porter-Cologne Act provides for statewide coordination of water quality regulations by establishing the California State Water Resources Control Board. The State Board is the statewide authority that oversees nine separate RWQCBs that collectively oversee water quality at regional and local levels. California RWQCBs issue CWA Section 401 Water Quality Certifications for possible pollutant discharges into waters of the U.S. or State. The North Coast Regional Waterboard may also regulate riparian areas as important buffers that prevent discharge and other negative impacts to Waters of the State. On April 2, 2019, the

California State Water Resources Control Board adopted new definitions and procedures for discharges of dredged or fill material to Waters of the State.

California Endangered Species Act

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

Other State Special Status Species and Communities

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

State Species of Special Concern include those plants and wildlife species that have not been formally listed yet are proposed or may qualify as endangered or threatened. In addition, USFWS Birds of Conservation Concern, and CDFW special status invertebrates are considered special status species by CDFW.

Sensitive Natural Communities

CDFW provides oversight of habitats (i.e., vegetation communities) listed as Sensitive in the California Natural Diversity Database (CNDDB) and on the California Sensitive Natural Communities List, based on global and state rarity rankings. The natural communities are broken down to alliance and association levels for vegetation types affiliated with ecological sections in California. The alliances on the California Sensitive Natural Communities List coincide with *A Manual of California Vegetation* (Sawyer et al. 2009). CDFW considers alliances and associations with a state rank of S1 to S3 to be Sensitive. The application of ranking for determination of Sensitive Communities is summarized as follows in **Table 3.1** (NatureServe 2021):

Table 3.1 NatureServe Conservation Status Ranks

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

California Fish and Game Code (FGC)

Natural Community Conservation Planning Act

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

Natural Community Conservation Plans (NCCPs) that Overlap the PSB

The PSB and BSA do not overlap any existing NCCPs.

Native Plant Protection Act

The CDFW administers the Native Plant Protection Act (Sections 1900–1913 of the FGC). These sections allow the California Fish and Game Commission to designate endangered and rare plant species and to notify landowners of the presence of such species. Plant species on California Native Plant Society's (CNPS) California Rare Plant Ranking (CRPR) Lists 1 and 2 are considered eligible for state listing as Endangered or Threatened pursuant to the California Fish and Game Code and CDFW has oversite of these special status plant species as a trustee agency. As part of the CEQA process, such species should be considered as they meet the definition of Threatened or Endangered under Sections 2062 and 2067 of the California Fish and Game Code. CRPR List 3 and 4 plants may warrant protection under CEQA Guidelines 15380 only in special circumstances. CDFW publishes and periodically updates lists of special status species which include, for the most part, the above categories. Additionally, there are 64 plant species designated as "rare," which is a special designation created before plants were rolled into CESA in the 1980s. The CESA and the Native Plant Protection Act (NPPA) required a project to have a "Scientific, Educational, or Management Permit" from CDFW for activities that would result in "take," possession, import, or export of state-listed plant species including research, seed banking, reintroduction efforts, habitat restoration, and other activities relating to any plant designated SE (State endangered), ST (State threatened), SR (State rare), or SC (State candidate for listing).

Lake or Streambed Alteration Agreement

Streams, lakes, and riparian vegetation that serve as habitat for fish and other wildlife species are subject to jurisdiction by the CDFW under Sections 1600-1616 of the FGC. A 1602 Lake and Streambed Alteration Agreement (LSAA) is generally required for any activity that would do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. The term "stream," which includes creeks and rivers, is defined in the California Code of Regulations

(CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Riparian is defined as, “on, or pertaining to, the banks of a stream;” therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself.” Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

Birds of Prey and Native Nesting Birds

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

Fully Protected Species

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

Migratory Bird Protection Act (MBPA)

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

3.3 Local Jurisdiction

City of Willits General Plan

The following policies and measures from the Willits General Plan (Neal Martin and Associates 1992) pertain to regulating biological resources within the PSB:

Policies:

– 3.21. Conserve to the greatest feasible extent, the City’s existing natural resources, with particular emphasis on air and water quality, open space, tree preservation and riparian habitat maintenance and enhancement.
– 3.22. Ensure that all adverse environmental impacts of proposed development projects are identified and acceptably mitigated prior to approval.

- 3.23. Ensure that environmental mitigation measures included as conditions of project approval are effectively implemented and maintained over the long term.
- 3.26. Cooperate with regional and state agencies in programs designed to reduce air and water pollution levels.
- 3.27. Consider utilization of focused Environmental Impact Reports and Mitigated Negative Declarations to address significant adverse project impacts in a cost-effective manner.
- 3.28. Initiate and/or support local and regional recycling programs, air quality policies, water conservation and watershed preservation efforts.
- 3.29. Promote alternatives to automobile use as a means of improving local air quality.

Measures:

- 3.32. All applications for development within 250 feet of Willits, Broaddus or Baechtel Creeks shall be required to include site-specific field observation by a qualified botanist and a wildlife biologist as part of the application package. This requirement may be waived in the event that the City's Environmental Review Officer determines that the proposed project will have no impact on the riparian corridor or that the site in question has been previously disturbed to the extent that the proposed project would be of minimal environmental concern.

City of Willits Urban Forest Management Plan (Draft)

The City released a draft Urban Forest Management Plan in October 2021 (Dudek 2021) to help the City progress towards creating a sustainable urban forest and climate change-resilient community. The following goals, strategies and objectives are relevant to the proposed Project.

Goal #1: Urban Forest Sustainability: Willits will have a sustainable urban forest that is adapted to climate change and provides widespread canopy cover throughout the City.

Strategy 1.1: Tree planting activities will promote a sustainable urban forest.

Objectives 1.1a: Develop criteria for selecting tree species to plant on City managed streets, parks, and other public and open spaces that prioritizes trees known to be adapted to changing climate conditions such as extreme heat and drought.

1.1b: The City tree inventory will comprise no more than 10% of one species, 20% of one genus, or 30% of one family.

1.1d: Tree planting projects in a City park will prioritize the use of local and regional native tree species.

1.1e: Prioritize planting trees rated by Water Use Classification of Landscape Species (WUCOLS) as very low and low water users.

Strategy 1.2: Increase tree canopy cover across the City.

Objectives 1.2b: Develop an annual tree planting plan for both public and private property based on the number of trees needed to reach 22% canopy cover. Total trees planted will not include trees that are required as replacement for a removed tree.

Goal #2: Tree Management: The City and community members will appropriately manage and maintain trees to ensure a vibrant, healthy urban forest.

Strategy 2.2: Ensure all City tree management activities and design standards reflect the most current understanding of urban forest sustainability.

Objective 2.2a: City tree management practices should implement current industry standards as defined by the International Society of Arboriculture, American National Standards Institute, and current research.

2.2b: Develop and adopt alternative design standards for sdiewatlk installation and repair that minimizes conflicts between trees, sidewalks, and other infrastructure by considering and providing sufficient growing space for trees.

4. Environmental Baseline Conditions

4.1 Climate

The hot-summer Mediterranean climate is characterized by dry hot dry summers and mild, wet winters. Precipitation primarily falls in the form of rain at this low elevation. Most rainfall occurs between October and April with an average annual precipitation of 51.4 inches a year (WCC 2021). Average winter temperatures range from 32 to 54.9 degrees Fahrenheit (WCC 2021). Average summer temperatures range from 47.3 to 85.3 degrees Fahrenheit (WCC 2021). Willits experiences an average of 34.5 days with highs above 90 degrees Fahrenheit (WCC 2021).

4.2 Topography and Soils

The PSB is relatively flat except for the elevation on the sides of the creeks, where the banks are somewhat incised. The elevation of the PSB ranges between approximately 1,364 and 1,397 feet above sea level. Soils include Cole silty clay loam 0 to 1 percent slopes, Feliz loam 0 to 2 percent slopes, Gielow sandy loam 0 to 5 percent slopes, and urban land (see the Aquatic Resources Delineation Report for more details). The USDA (2021) defines the Cole soil series as very deep, “somewhat poorly drained soils that formed in alluvium from mixed sources.” Feliz loam soils are “very deep, well drained soils on flood plains...formed in alluvium derived from mixed sedimentary rocks” (USDA 2021). The Gielow sandy loam soil is characterized by “deep, somewhat poorly drained soils formed in alluvium from sedimentary rocks” found on alluvial plains and fans (USDA 2021).

4.3 Habitat Elements

No high-quality natural habitat elements were observed within the PSB. Habitat downstream of the PSB within Broaddus Creek was of higher quality. The PSB is largely urban scrub, with scattered cultivated trees and invasive plants. Observed habitat within the PSB included patches of Valley Oak (*Quercus lobata*) Woodland Alliance vegetation community (considered an SNC with a state ranking of S3), and three riparian areas surrounding the three intermittent tributaries that run across the PSB (see Botanical Survey and Habitat Assessment [GHD 2021a] for additional information and locations). Additionally, wetlands resultant from drainage associated with the rail prism are located along the railroad throughout the PSB (see Aquatic Resources Delineation Report [GHD 2021b] for additional information and locations).

A Tree Survey Report (GHD 2021c) was completed for the Project and included an inventory of tree species within the PSB. The report documented and tagged a total of 89 trees within the PSB. Notable naturally occurring large native trees within the PSB included eleven large valley oaks (*Quercus lobata*), a large California black oak (*Quercus kelloggii*), two large cottonwoods (*Populus fremontii* ssp. *fremontii*), and

three large white alders (*Alnus rhombifolia*). The Broaddus Creek riparian corridor supported the highest concentration of medium and large white alders and the large cottonwoods within the PSB and also contained arroyo willow (*Salix lasiolepis*), and Oregon ash (*Fraxinus latifolia*). Native riparian and oak trees are also clustered around Baechtel and Haehl Creek riparian corridors. The Baechtel Creek riparian corridor was characterized by white alder, arroyo willow (*Salix lasiolepis*), and Oregon ash, with invasive Himalayan blackberry (*Rubus armeniacus*) in the understory. The Haehl Creek riparian corridor was characterized by red alder (Alnus rubra) and arroyo willow, with invasive Himalayan blackberry in the understory. Valley oak woodlands near the southern extent of the PSB supported most of the medium to large valley oaks rooted within the PSB, and valley oak, California black oak (*Quercus kelloggii*), and willows were scattered throughout the PSB. A large coast redwood (*Sequoia sempervirens*) and large incense cedar (*Calocedrus decurrens*) also occur within the PSB near the East Valley Street intersection. Saplings and pole trees less than 12 inches DBH also occur throughout the PSB but were not inventoried. The PSB and BSA are not expected to provide high quality habitat for most sensitive biotic species (due to edge effects associated with development immediately adjacent); however, sensitive species may occur in the immediate vicinity and have potential to traverse the PSB and BSA.

4.4 Hydrology

The Project is located in a lowland area on the western side of Little Lake Valley. This area contains many streams that convey water from the surrounding hills through Little Lake Valley to Outlet Creek, which collects water from Little Lake Valley and eventually carries it to the Eel River. Flow through Little Lake Valley is generally southeast to northwest (Caltrans 2012). The streams that could be affected by the Project footprint are Broaddus Creek, Baechtel Creek, and Haehl Creek; all are intermittent. Standing water (as isolated pools) was observed in all three creeks at the April 2021 and July 2021 site visits, and many of the pools had dried up as observed at the October 2021 site visit. Haehl Creek contained some shallow pools at the October 2021 visit, and a large, anaerobic pool downstream of the bridge. Young of the year steelhead/Rainbow Trout were observed in the isolated pools within all three creeks at the April site visit.

Historical accounts of hydrology within the Little Lake Valley are further described:

> *Historically, during the wet season, these streams would overflow their banks and inundate the surrounding meadows, creating high-quality wetlands. With the development of the city of Willits and agricultural conversion of the surrounding lands, many drainage projects have been implemented throughout Little Lake Valley. These drainage projects have often resulted in incised streambeds, redirected creeks, ripped hardpan, and construction of numerous artificial drainage ditches. All these drainage features efficiently remove water from Little Lake Valley at an accelerated rate, quickly drying former wetland meadows to accommodate early grazing and hay production. A number of reservoirs in the surrounding hills further reduce wet-season flows through Little Lake Valley* (Caltrans 2012).

Despite these extensive alterations, a number of wetlands were observed throughout the PSB. However, these wetlands predominantly result from drainage alterations associated with the rail prism.

4.5 Habitat Access, Connectivity, and Migratory Corridors

The PSB and BSA are 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 PSB, although there is possible suitable habitat in the vicinity, in Little Lake Valley to the west. In addition, no “essential connectivity areas,” “natural landscape blocks,” or “small

natural landscape areas" that would support other sensitive species have been identified or mapped in the Project vicinity by the California Essential Habitat Connectivity Project (CDFW 2021a).

Creeks within the PSB (Baechtel, Broaddus and Haehl Creeks) are tributaries to Davis Creek, which flows to Outlet Creek which flows into the Eel River. Historical accounts (from the 1930's to the late 1980's) of the three creeks within the PSB report observation of Coho and Chinook Salmon and steelhead. Although these accounts are historic, suitable habitat within the three creeks appears present (however is limited during the dry season when the creeks can dry up). Sightings of juvenile steelhead (or Rainbow Trout) occurred during a site visit in all of the three creeks within the PSB. Therefore, the three creeks within the PSB act as migratory corridors for anadromous fish.

Riparian habitat can function as a wildlife corridor, especially because the intermittent tributaries pass underneath U.S. Highway 101, which can serve as a barrier. Maintaining riparian connectivity throughout the PSB will maintain wildlife habitat and migration corridors.

5. Methods

5.1 Preliminary Investigation

Database Searches (CNDDB, CNPS, IPaC and NMFS)

A database search for sensitive plant and wildlife species that may occur in the Project vicinity was conducted by GHD on October 18, 2021. Database searches included the CNDDB Rare Find (CDFW 2021a), CNPS Inventory of Rare and Endangered Vascular Plants (CNPS 2021), USFWS Information for Planning and Conservation (IPaC; USFWS 2021b), and the NOAA Fisheries West Coast Region California Species List Tools (NOAA Fisheries 2016). The search encompassed nine U.S. Geological Survey (USGS) quadrangles (quads) centered on the Project Area quad (Willits) and the surrounding eight quads: Longvale, Willis Ridge, Brushy Mountain, Foster Mountain, Redwood Valley, Laughlin Range, Greenough Ridge, and Burbeck. In addition, citizen science databases were reviewed for additional local wildlife and botanical information within the BSA (BAMVT 2021, Bumble Bee Watch 2021, eBird 2021, iNaturalist 2021).

Plant species on CNPS California Rare Plant Ranking (CRPR) Lists 1 and 2 are considered eligible for state listing as endangered or threatened pursuant to the California Fish and Game Code. The CDFW has oversite of these special status plant species as a trustee agency. As part of the CEQA process, such species should be considered as they meet the definition of threatened or endangered under Sections 2062 and 2067 of the California Fish and Game Code. Scoping for special status plant species included any state or federally listed plants as well as plant species on CNPS California Rare Plant Ranking (CRPR) Lists 1 and 2. These database searches can be found in Appendix B. Figure 4 in Appendix A shows all special status species tracked by CNDDB that are known to occur within a 5 mile radius of the PSB.

National Wetlands Inventory (NWI)

A search of the NWI was conducted in early July 2021 for the PSB, prior to the aquatic resources delineation conducted July 6-8th, 2021 (GHD 2021b). The NWI mapping for the Project can be found in **Appendix A, Figure 5**. Wetlands and Other Waters of the U.S. observed during the delineation yielded additional waters than shown through NWI, which is typical (see **Appendix A, Figures 5-1 through 5-4**). The wetlands and Other Waters of the U.S. can be found in the Aquatic Resources Delineation Report (GHD 2021b), available separate to this BRR. It should be noted that the wetlands and Other Waters

identified in the delineation report (and shown on Figures 5-1 through 5-4) have not yet received a Preliminary Jurisdictional Determination from the USACE as of the date of this BRR.

5.2 Field Surveys

The botanical, Sensitive Natural Community (SNC), and aquatic resources delineation survey area are equivalent to the PSB shown in **Appendix A, Figure 2**. State special status wildlife species were evaluated at the level of the BSA shown in **Appendix A, Figure 3**. At the time of field surveys, 23.6 acres of the PSB were studied. On January 10th, 2022, 2.2 acres were added to the Project Boundary, but all additions are within the footprint of existing developed streets and contain no special status plants, SNCs or aquatic resources. The BSA is designed to account for any auditory and visual disturbance to wildlife or other resources, as well as other potential impacts such as increased sedimentation and turbidity from construction or increased dust.

Special Status Plants

GHD botanists Kelsey McDonald and Rose Dana conducted initial spring and summer floristic surveys for special status plants according to *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* by the California Natural Resource Agency (CDFW 2018) and *General Rare Plant Survey Guidelines* by the *Endangered Species Recovery Program* (USFWS 2002). The special status plant survey was conducted by walking the PSB and identifying all plant species encountered to the lowest taxonomic level necessary for rare plant identification. Nomenclature follows *The Jepson Manual* (Baldwin et al. 2012).

GHD Botanist Kelsey McDonald has a M.S. in Environmental and Natural Resource Sciences from Humboldt State University, and she is a CNPS Certified Consulting Botanist with over six years of experience conducting special status plant surveys. GHD Botanist Rose E. Dana has a degree in Plant Ecology from Humboldt State University is working on her M.S. in Natural Resource Management, with over 10 years of experience conducting biological and botanical surveys.

Kelsey McDonald and Rose Dana conducted botanical surveys on April 19-20th and July 6-8th, 2021. During the spring survey, the weather was sunny and approximately 60 degrees Fahrenheit. During the summer survey the weather was sunny and approximately 95 degrees Fahrenheit. A list of species observed within the PSB is provided in Appendix C of the Botanical Survey and Habitat Assessment, which is available as a separate document.

The total spring survey effort was 20 person-hours, and the total summer survey effort was 20 person-hours. Adjacent public property near the southern end of the PSB with documented occurrences of North Coast semaphore grass and Baker's meadowfoam (*Limnanthes bakeri*) was visited at the time of surveys as reference sites. Habitats and special status plants were photo-documented onsite (Appendix D of the Botanical Survey and Habitat Assessment, GHD 2021a). Special status plants were mapped using points collected in the field with an Eos Arrow 100 Submeter Global Positioning System (GPS) Receiver with Global Navigation Satellite System (GNSS) and an iPad running ArcGIS Collector software in the WGS84 datum.

Sensitive Natural Communities

Vegetation communities onsite with species typical of Sensitive Natural Communities (SNCs) were documented in the field and classified at the alliance level according to the *Manual of California Vegetation* (Sawyer et al. 2009) using the Rapid Assessment method. Vegetation Rapid Assessments were conducted

according to protocol (CDFW 2018, CDFW-CNPS 2019), and Vegetation Rapid Assessment forms were used to characterize dominant vegetation and evaluate habitat quality. These Vegetation Rapid Assessments provided the basis for potential SNC designation. Photo documentation of habitats observed onsite were recorded and are available in Appendix D of the Botanical Survey and Habitat Assessment (GHD 2021a). Similar to special status plants, SNCs (and other non-SNC vegetation communities) were mapped using points collected in the field with an Eos Arrow 100 Submeter GPS Receiver with GNSS and an iPad running ArcGIS Collector software in the WGS84 datum. Vegetation community boundaries were then digitized with GIS from aerial imagery based on field observations and visible vegetation signatures.

Aquatic Resources

A delineation of aquatic resources (including wetlands) was completed July 6-8th 2021 by GHD Plant Ecologist Kelsey McDonald, and GHD Botanist Rose Dana. See the separate Aquatic Resources Delineation Report (GHD 2021b) prepared for the Project.

Wildlife Survey and Wildlife Habitat Evaluation Methods

Kelsey McDonald and Rose Dana conducted site visits to the PSB on April 19-20th, July 6-8th, and October 5-6th, 2021 and recorded incidental wildlife sightings. During the April 19-20th site visit, weather conditions were mild, about 65 degrees Fahrenheit, with a gentle breeze and clear skies. During the July 6-8th site visit, weather conditions were hot, about 95 degrees Fahrenheit, and clear skies. During the October 5-6th site visit, weather conditions were mild, about 75 degrees Fahrenheit, and partially cloudy. The surveyor walked the extent of the planned trail alignment throughout the extent of the PSB (Error! Reference source not found.). A list of wildlife species observed during survey are included in Error! Reference source not found.. No protocol-level surveys for special status wildlife were conducted at this time. Analysis of suitable habitat outside of the PSB but within the BSA, and thus a species potential to occur within the BSA, relies on spatial analysis using satellite imagery (see **Table 6.3** for wildlife species' potential to occur in both the PSB and BSA).

Agency Coordination

An official species list for the Project USGS quadrangle (Willits) and surrounding eight USGS quadrangles (Longvale, Willis Ridge, Brushy Mountain, Foster Mountain, Redwood Valley, Laughlin Range, Greenough Ridge, and Burbeck) was obtained from the USFWS. An official species list of the west coast region under the jurisdiction of NMFS was also obtained. Database searches of wildlife and plants of the nine quad search area were obtained from the CNDDB and CNPS. See **Appendix B** for the USFWS and NMFS species lists, and database searches.

6. Results

6.1 Summary of General Biological Resources

Based on occurrence records, field surveys, site visits, and habitat availability, multiple special status wildlife and plant species have a moderate to high potential to occur in the PSB. Additionally, field surveys yielded the potential for a special status (CESA threatened) botanical species to be present (North Coast semaphore grass); however, the specimens also fit the description of Davy's semaphore grass which is ranked as CRPR 4.3, limited distribution. Additional coordination is needed with CDFW to determine whether the specimen is a state listed species, or a regionally limited distribution species. Field surveys

also yielded the observation and delineation of wetlands, one SNC and three areas or riparian habitat within the PSB.

A list of all wildlife species detected during field visits are presented in **Appendix D**, and **Table 6.3** includes the results of wildlife species scoped to occur within the nine quad search area. **Table 6.3** and the on-site species list are not intended to be comprehensive lists of all species that could occur within the PSB. No protocol-level wildlife surveys occurred.

6.2 Special Status Plants

Special Status Plants and Sensitive Habitats

Table 6.1 summarizes the potential for special status plants documented in the surrounding 9-quad area to occur within the PSB. Please see the Species Descriptions section for a discussion of special status plants observed on-site as well as those with a High or Moderate Potential to occur.

Plants identified as semaphore grass were observed within the PSB along the railroad easement during floristic surveys in two locations (**Appendix A, Figure 6-3 and 6-4**). Semaphore grass was originally identified as North Coast semaphore grass (*Pleuropogon hooverianus*, CRPR 1B.1, State Threatened) but specimens also fit the description for Davy's semaphore grass (*Pleuropogon californicus* var. *davyi*, CRPR 4.3, limited distribution). Further coordination with CDFW is recommended in 2022 to confirm the plant's identity. No other potential special status plants were observed within the PSB.

Table 6.1 Potential for Special Status Plants to Occur in the PSB

Scientific Name	Common Name	FESA	CESA	Global Rank[2]	State Rank[2]	CRPR[2]	Habitat Requirements[1]	Potential to Occur in the PSB
Alisma gramineum	grass alisma	None	None	G5	S3	2B.2	Marshes and swamps (assorted shallow freshwater)	**Moderate Potential.** This species was observed within 0.5 miles of the PSB in 2006 (CNDDB 2021). This species may occur in the vicinity of the PSB at the three creek crossing locations. Most of the proposed trail alignment does not contain suitable habitat.
Anisocarpus scabridus	scabrid alpine tarplant	None	None	G3	S3	1B.3	Upper montane coniferous forest (metamorphic, rocky)	**No Potential.** There are no known observations within or near the PSB. Suitable habitat, consisting of upper montane coniferous forest, is not present in or adjacent to the PSB.
Arctostaphylos auriculata	Mt. Diablo manzanita	None	None	G2	S2	1B.3	Chaparral (standstone), Cismontane woodland	**Low Potential.** There are no known observations within or near the PSB. Marginal woodland and chaparral habitat is present adjacent to the PSB. However, the PSB is disturbed by previous development and does not contain sandstone.
Astragalus agnicidus	Humboldt County milk-vetch	None	SE	G2	S2	1B.1	Broadleafed upland forest, North Coast coniferous forest	**Low Potential.** There are no known observations within or near the PSB. Marginal broadleafed forest is present adjacent to portions of the PSB. There are a few gravelly streambanks available within the PSB, but they are marginal.
Blennosperma bakeri	Sonoma sunshine	FE	SE	G1	S1	1B.1	Valley and foothill grassland (mesic), Vernal pools	**Moderate Potential.** There are no known observations within the PSB, and the nearest occurrence was documented in 2018, approximately 8 miles from the PSB. Valley grassland habitat is present adjacent to the PSB, and marginal mesic grassland is seasonally available within the PSB. However, the railroad corridor contains poor habitat that is unlikely to support Sonoma sunshine.
Brasenia schreberi	watershield	None	None	G5	S3	2B.3	Marshes and swamps (freshwater)	**Low Potential.** There are no known observations within or near the PSB. Riparian and wetland areas do occur within the PSB, but suitable swamps or marshes are not present.

Scientific Name	Common Name	FESA	CESA	Global Rank[2]	State Rank[2]	CRPR[2]	Habitat Requirements[1]	Potential to Occur in the PSB
Calystegia collina ssp. tridactylosa	three-fingered morning-glory	None	None	G4T1	S1	1B.2	Chaparral, Cismontane woodland	**Low Potential.** There are no known observations within the PSB. Ideal suitable habitat (chaparral) occurs outside of the PSB; however, this species is known to occur in rocky, gravelly openings (CNPS 2021). Gravelly open areas do occur within PSB.
Cryptantha dissita	serpentine cryptantha	None	None	G2	S2	1B.2	Chaparral (serpentinite)	**Low Potential.** There are no known observations within or near the PSB. Serpentinite soils do not occur within the PSB, but there is some marginal chaparral.
Cryptantha excavata	deep-scarred cryptantha	None	None	G1	S1	1B.1	Cismontane woodland (sandy or gravelly)	**Low Potential.** There are no known observations within or near the PSB. Scattered cismontane woodland areas of marginal quality are present within the PSB.
Fritillaria roderickii	Roderick's fritillary	None	SE	G1Q	S1	1B.1	Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	**Low Potential.** There are no known observations within or near the PSB. Disturbed valley grassland habitat is present within the PSB.
Gilia capitata ssp. pacifica	Pacific gilia	None	None	G5T3	S2	1B.2	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland	**Moderate Potential.** This species was observed within 5 miles of the PSB in 1980 (CNDDB 2021). Disturbed valley grassland habitat is present within the PSB.
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	None	None	G5T2	S2	1B.2	Valley and foothill grassland	**Moderate Potential.** There are no known observations within or near the PSB. Disturbed valley grassland habitat is present within the PSB. This species may occur in grassy patches along the existing railroad track or near roads intersecting the PSB.
Hesperolinon adenophyllum	glandular western flax	None	None	G2G3	S2S3	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland	**Moderate Potential.** This species was observed within 2 miles of the PSB in 1920 (CNDDB 2021). Disturbed valley grassland habitat is present within the PSB, and patches of marginal broadleafed woodland species are present within the PSB.

Scientific Name	Common Name	FESA	CESA	Global Rank[2]	State Rank[2]	CRPR[2]	Habitat Requirements[1]	Potential to Occur in the PSB
Horkelia tenuiloba	thin-lobed horkelia	None	None	G2	S2	1B.2	Broadleafed upland forest, Chaparral, Valley and foothill grassland	**Moderate Potential.** There are no known observations within or near the PSB. Disturbed mesic grassland habitat is present in the PSB, and patches of marginal broadleafed woodland species are present within the PSB.
Limnanthes bakeri	Baker's meadowfoam	None	SR	G1	S1	1B.1	Meadows and seeps, Marshes and swamps (freshwater), Valley and foothill grassland (vernally mesic), Vernal pools	**High Potential.** This species was observed within 500 feet of the PSB in 2007 (CNDDB 2021). Marginal grassland habitat is present in the PSB. This species has a high likelihood to occur in grassland habitat near creek crossings, which is present within the PSB.
Lupinus milo-bakeri	Milo Baker's lupine	None	ST	G1Q	S1	1B.1	Cismontane woodland (often along roadsides), Valley and foothill grassland	**Moderate Potential.** There are no known observations within or near the PSB. Disturbed valley grassland habitat and scattered patches of woodlands are present within the PSB. This species may potentially occur in patches of suitable habitat adjacent to the railroad track within the PSB.
Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	G4T2	S2	1B.1	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	**Moderate Potential.** This species was observed within 0.3 miles of the PSB in 2006 (CNDDB 2021). Disturbed valley grassland habitat and scattered patches of woodlands are present within the PSB. This species may be present near stream crossings that intersect the PSB.
Piperia candida	white-flowered rein orchid	None	None	G3	S3	1B.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	**Low Potential.** Unknown distance from PSB, mapped in the general vicinity of Willits. There are a few redwood trees in the PSB but lacking a presence of thick forest duff and proper microhabitat.
Plagiobothrys lithocaryus	Mayacamas popcornflower	None	None	GH	SH	1A	Chaparral, Cismontane woodland, Valley and foothill grassland	**Moderate Potential.** There are no known observations within or near the PSB. Disturbed valley grassland habitat and scattered patches of woodlands are present within the PSB.
Pleuropogon hooverianus	North Coast semaphore grass	None	ST	G2	S2	1B.1	Broadleafed upland forest, Meadows and seeps, North Coast coniferous forest	**High Potential.** This species was observed within 500 feet of the PSB in 2016 (Calflora 2021). Disturbed valley grassland habitat and patches of upland

Scientific Name	Common Name	FESA	CESA	Global Rank[2]	State Rank[2]	CRPR[2]	Habitat Requirements[1]	Potential to Occur in the PSB
								forest occur within the PSB. Possibly present within PSB.
Pleuropogon californicus var. davyi	Davy's semaphore grass	None	None	G5T3	S3	4.3	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps.	**High Potential.** This species was observed within 0.25 miles of the PSB in 1951 (CNDDB 2021). Disturbed valley woodland, meadows and seeps occur within the PSB. Possibly present within PSB.
Potamogeton epihydrus	Nuttall's ribbon-leaved pondweed	None	None	G5	S2S3	2B.2	Marshes and swamps (assorted shallow freshwater)	**Low Potential.** There are no known observations within or near the PSB. The intermittent streams become stagnate pools of water that have a low potential to provide seasonal habitat.
Ramalina thrausta	angel's hair lichen	None	None	G5	S2?	2B.1	North Coast coniferous forest	**Low Potential.** There are no known observations within or near the PSB. Patches of upland coniferous trees exists within the PSB. This species is sometimes found on red alder (*Alnus rubra*), present in low amounts in riparian zones which intersect with the PSB.
Sanguisorba officinalis	great burnet	None	None	G5?	S2	2B.2	Bogs and fens, Broadleafed upland forest, Meadows and seeps, Marshes and swamps, North Coast coniferous forest, Riparian Forest	**Moderate Potential.** There are no known observations within or near the PSB. There are scattered patches of broadleafed upland forest within the PSB, and riparian forest habitat occurs at creek crossings, which intersect with the PSB. Therefore, this species may occur within the PSB, particularly at the creek crossing locations.
Tracyina rostrata	beaked tracyina	None	None	G2	S2	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland	**Moderate Potential.** There are no known observations within or near the PSB. Disturbed valley grassland habitat and scattered patches of woodlands are present within the PSB.
Trifolium buckwestiorum	Santa Cruz clover	None	None	G2	S2	1B.1	Broadleafed upland forest, Cismontane woodland, Coastal prairie	**Low Potential.** There are no known observations within or near the PSB. Scattered patches of marginal broadleafed upland forest and disturbed grassland are present within the PSB. This species may potentially occur in gravely margins (CNPS 2021).
Trifolium hydrophilum	saline clover	None	None	G2	S2	1B.2	Marshes and swamps, Valley and foothill	**Low Potential.** This species was observed within 4 miles of the PSB in 2019

Scientific Name	Common Name	FESA	CESA	Global Rank[2]	State Rank[2]	CRPR[2]	Habitat Requirements[1]	Potential to Occur in the PSB
							grassland (mesic, alkaline), Vernal pools	(CNDDB 2021). Disturbed valley grassland habitat is present, and marsh habitat is potentially present near creek crossings.
Viburnum ellipticum	oval-leaved viburnum	None	None	G4G5	S3?	2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	**Low Potential.** There are no known observations within or near the PSB. Scattered patches of woodland and coniferous trees are present in the PSB and provide marginal habitat.

Footnotes:

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

Column Header Categories and Abbreviations:

FESA Listing status under the federal Endangered Species Act (ESA)
FE Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; FD = Federally Delisted
CESA Listing status under the California state Endangered Species Act (CESA)
SE State Endangered; SD = State Delisted; ST = State Threatened.

GRank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2021) (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. Subspecies/variety level: "Subspecies/varieties receive a T-rank attached to the G-rank. With the subspecies/varieties, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety" (CDFW 2021b); ? = " Denotes inexact numeric rank" (NatureServe 2021); Q = " Questionable taxonomy that may reduce conservation priority" (NatureServe 2021)

SRank: State Rank from NatureServe's Heritage Methodology (NatureServe 2021) (ranking according to degree of imperilment in the state (California) - S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state; S4 = Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors; S5 = Secure—Common, widespread, and abundant in the state; SNR = State Not Ranked.

CRPR: CNPS rankings for rare plants (CNPS 2021) - 1A = Plants presumed extinct in California; 1B = Plants rare, threatened or endangered in California and elsewhere; 2 = Plants rare, threatened, or endangered in California, but more common elsewhere; 3 = Plants about which more information is needed (a review list); 4 = Plants of limited distribution (a watch list); n/a = not applicable; Threat Code extensions and their meanings: ".1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat); .3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)" (CDFW 2021b).

Potential to Occur:

No Potential Habitat in and adjacent to the PSB is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Low Potential: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found in the PSB.

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

Moderate Potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found in the PSB.

High Potential: All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on in the PSB

Present: Detected or documented on-site.

Species Descriptions

Species described below have a moderate to high potential to occur within the PSB (**Table 6.1**).

North Coast semaphore grass (Pleuropogon hooverianus), CRPR 1B.1, High Potential

North Coast semaphore grass is a rhizomatous perennial grass that is endemic and threatened in the State of California. North Coast semaphore grass was documented by Caltrans in 2016 on State property less than 500 feet from the PSB. During the April 19-20th survey, the Caltrans occurrence was located and visited as a reference site, to compare observations, and was observed in flower. Within the PSB, the semaphore grass was identified by its rhizomatous habit, distinctive elongated, laterally flattened spikelet's that were primarily erect to ascending, and short awns. The semaphore grass was sparse along the southern portion of the rail easement in herbaceous wetlands characterized by pennyroyal (*Mentha pulegium*), tall nutsedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*), and bird's foot trefoil (*Lotus corniculatus*). North Coast semaphore grass appeared to be just beginning to flower during the April 19-20th survey, and approximately ten individuals were observed.

The population was relocated during the July 6-8th survey, however only a few inflorescences were observed in each of the two locations (**Appendix C, Photos**). They were senescent and beginning to drop seeds at that time. Rhizomes were observed, matching the species description for *P. hooverianus* as stated in The Jepson Manual (Baldwin et al. 2012). At a height of 35 cm and with a lower floret lemma measuring 6-7 millimeters, the plants appeared to be somewhat stunted compared to the Jepson description and the documented North Coast semaphore grass at the adjacent reference site, which offered higher quality riparian habitat. North Coast semaphore grass has many overlapping characteristics with Davy's semaphore grass (*Pleuropogon californicus var. davyi*), a limited distribution plant (CRPR 4.3). The height of the specimen observed, and the size of its lower floret lemma may be a better fit for Davy's semaphore grass. Based on the imperfect fit with the species description and overlapping traits with Davy's semaphore grass, coordination with CDFW is recommended in 2022 to confirm the plant's identity (**Appendix C, Photos**).

Davy's semaphore grass (Pleuropogon californicus* var*. davyi), CRPR 4.3, High Potential

Davy's semaphore grass is a caespitose perennial grass that is endemic and has a limited distribution in California (Baldwin et al. 2012). As a CRPR 4 list species, no mitigation is required for this taxon. It is found in marshy grasslands, vernal pools, sloughs, cismontane woodland, and lower montane coniferous forest. This species was observed within 0.25 miles of the PSB in 1951 (CDFW 2021a).

Baker's meadowfoam (Limnanthes bakeri), CRPR 1B.1, High Potential

Baker's meadowfoam is an annual herb that is endemic and rare in the State of California. It is found within meadows and seeps, freshwater marshes and swamps, vernal pools, and valley and foothill grasslands. This species was observed within 500 feet of the PSB in 2007 (CDFW 2021a).

Congested-headed hayfield tarplant (Hemizonia congesta* ssp*. congesta), CRPR 1B.2, Moderate Potential

Congested-headed hayfield tarplant is an annual herb that is found in valley and foothill grassland and is hreatened by agriculture, development, and road construction. There are no known observations within or near the PSB.

Sonoma sunshine (Blennosperma bakeri), CRPR 1B.1, Federal and State Endangered, Moderate Potential

Sonoma sunshine is an annual herb that is endemic and endangered in the State of California. The nearest occurrence was documented in 2018, approximately eight miles from the PSB. This species occurs in mesic valley and foothill grasslands, vernal pools, and wetland/riparian zones.

The April 19-20th surveys were appropriately timed to observe Federally and State Endangered Sonoma sunshine in bloom, and it was not observed within the PSB. Although potential vernal pool habitat for Sonoma sunshine occurs in the surrounding area, the PSB is located on the highly disturbed railroad easement. The railroad corridor is poor potential habitat that is unlikely to support Sonoma sunshine.

Mayacamas popcornflower (Plagiobothrys lithocaryus), CRPR 1A, Moderate Potential

Mayacamas popcornflower is an annual herb that is endemic to California and is found in chaparral, cismontane woodland, and valley and foothill grassland. It is generally found in mesic areas.

Glandular western flax (Hesperolinon adenophyllum), CRPR 1B.2, Moderate Potential

Glanfular western flax is an annual herb that is endemic to California and is found in chaparral, cismontane woodland, and valley and foothill grassland. It is generally found in serpentine areas. This species is threatened by geothermal development, recreation, and grazing and possibly by urban development (CNPS 2021).

Thin-lobed horkelia (Horkelia tenuiloba), CRPR 1B.2, Moderate Potential

Thin-lobed horkelia is a perennial herb that is endemic to California, and it is found in broad-leafed upland forest, chaparral, and valley and foothill grassland. It is threatened by development, and possibly threatened by foot traffic, trail maintenance, logging, and non-native plants (CNPS 2021).

Beaked tracyina (Tracyina rostrata), CRPR 1B.2, Moderate Potential

Beaked tracyina is an annual herb that is endemic to California and is found in chaparral, cismontane woodland and valley and foothill grassland. This species is threatened by grazing and non-native plants and is possibly threatened by development and vehicles (CNPS 2021).

Milo Baker's lupine (Lupinus milo-bakeri), CRPR 1B.2, Moderate Potential

Milo Baker's lupine is an annual herb that is endemic to California and is found in, cismontane woodland and valley and foothill grassland. This species is seriously threatened by urbanization, road maintenance, road widening, and herbicide application and is potentially threatened by competition (CNPS 2021).

Great burnet (Sanguisorba officinalis), CRPR 2B.2, Moderate Potential

Great burnet is a perennial rhizomatous herb that is found in bogs, fens, broad-leafed upland forest, meadows, seeps, marshes, swamps, North Coast coniferous forest, and riparian forest. This species is potentially threatened by non-native plants (CNPS 2021).

Baker’s navarretia (Navarretia leucocephala* ssp. *bakeri), CRPR 1B.2, Moderate Potential

Baker’s navarretia is an annual herb that is endemic to California and found in cismontane woodland, lower mountain coniferous forest, meadows, seeps, vernal pools, and valley and foothill grassland. This species may be more widespread than is currently documented. It is threatened by development, habitat alteration, road construction, and agriculture and possibly non-native plants (CNPS 2021).

Grass alisma (Alisma gramineum), CRPR 2B.2, Moderate Potential

Grass alisma is a perennial aquatic rhizomatous herb in the *Alismataceae* family. This species grows in marshes and swamps and assorted shallow freshwater habitats. Most observations for this species have been in the north-eastern corner of California, but there have been some occurrence sightings in Mendocino County, and at least one occurrence within 0.5 miles of the PSB. This species has a moderate potential to occur in the vicinity of the PSB at the creek crossing locations, especially considering the proximity of the prior occurrence in 2006. Generally, the PSB does not contain suitable habitat.

Pacific gilia (Gilia capitata* ssp. *pacifica), CRPR 1B.2, Moderate Potential

Pacific gilia is an annual herb most often found in coastal bluff scrub, chaparral, coastal prairie, and valley and foothill grassland. The species thrives in well-drained soil and full sunlight. Pacific gilia is known to California and Oregon, where it blooms from April to August, and is found at elevations from near sea level to just over 3,000 feet. The subspecies is threatened by development and recreational activities and possibly threatened by road construction and logging (CNPS 2021).

Critical Habitat

No critical habitat has been designated for Sonoma sunshine, the sole federally-listed species scoped to potentially occur within the PSB (USFWS 2016b).

6.3 Sensitive Natural Communities and Riparian Habitat

The PSB contains the valley oak (*Quercus lobata*) woodland alliance vegetation community, which is considered an SNC due to its S3 ranking (**Appendix A, Figure 6-2, 6-3, 6-4**). Additionally, the PSB contains three riparian zones surrounding the three intermittent tributaries (**Appendix A, Figure 6-1, 6-2, 6-3**). These features are further described below and summarized in **Table 6.2**.

Table 6.2 Sensitive Natural Communities and Riparian Habitat within in the PSB

Habitat Type	Global Rank[2]	State Rank[2]	General Habitat Description[1]	Potential to Occur in the PSB
Valley Oak Woodland Alliance SNC	G3	S3	Woodland	**Present.** Valley Oak Woodland Alliance SNC occurs in two locations in the PSB and totaled 82,678 sq. ft (1.90 acres)
Riparian habitat of Broaddus Creek	G4	S4	Riparian mixed trees, identified as White Alder Woodland Alliance	**Present.** White Alder Woodland Alliance riparian zone observed within the PSB, and totaled 27,112 ft (0.62 acres)
Riparian habitat of Baechtel Creek	G4	S4	Riparian mixed trees, identified as White Alder Woodland Alliance	**Present.** White Alder Woodland Alliance riparian zone observed within the PSB and totaled 7,558 sq. ft. (0.17 acres)
Riparian habitat of Haehl Creek	G5	S4	Riparian mixed trees, identified as Red Alder Forest Alliance	**Present.** Red Alder Woodland Alliance riparian zone occurs in one location within the PSB and totaled 10,400 sq. ft. (0.24 acres).

Footnotes:

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

Column Header Categories and Abbreviations:

GRank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2021 (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. Subspecies/variety level: "Subspecies/varieties receive a T-rank attached to the G-rank. With the subspecies/varieties, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety" (CDFW 2021b); ? = " Denotes inexact numeric rank" (NatureServe 2020); Q = " Questionable taxonomy that may reduce conservation priority" (NatureServe 2021)

State Rank: State Rank from NatureServe's Heritage Methodology (NatureServe 2021) (ranking according to degree of imperilment in the state (California) – S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

Threat code extensions and their meanings: ".1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat); .3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)" (CDFW 2021b).

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SNC Surveys and Mapping

The valley oak woodland alliance is defined by dominant presence of valley oak (>50% relative cover) with an open canopy (greater than 10%) to continuous, or savanna-like (less than 10%, but evenly distributed); shrub layer is sparse to open, with a grassy herbaceous layer (Sawyer et al. 2009). It is considered an SNC because this vegetation alliance is ranked as “vulnerable” (S3). There are two locations of this SNC which are further described below.

Valley Oak SNC Location 1

Location 1 of the valley oak woodland alliance SNC corresponds with the Rapid Assessment datasheet WILL002 in **Appendix E**. Location 1 was observed in approximately the center of the PSB from north to south, just south of Baechtel Creek. Location 1 spans either side of the railroad for approximately 750 feet and then extends on the east side of the railroad within the PSB for approximately another 400 feet (**Appendix A Figure 6-2 and 6-3**). This SNC contained a tree canopy cover of 24% valley oak, 10% arroyo willow, and 1% Oregon ash. The canopy contained a greater density of valley oak on the north side of the SNC and less dense along the south side, where trees are semi-evenly distributed with an open canopy and semi dense understory. Associated understory vegetation included shrub cover of 20% smooth dogwood (*Cornus glabrata*), 7% Himalayan blackberry, 5% coyote brush (*Baccharis pilularis*), and 5% poison oak (*Toxicodendron diversilobum*). The herbaceous layer primarily comprised of 10% ripgut brome (*Bromus diandrus*). The SNC in Location 1 comprises 56,321 square feet (1.29 acres), or 5% of the PSB.

Valley Oak SNC Location 2

Location 2 of the valley oak woodland alliance SNC corresponds with the Rapid Assessment datasheet WILL006 in **Appendix E**. Location 2 was observed in the southern most portion of the PSB (**Appendix A Figure 6-4**). This SNC contained a tree canopy cover of 35% valley oak. The SNC is influenced by the riparian zone at northern portion of Location 2 and contains a higher canopy cover. In the southern portion of SNC Location 2, the trees are influenced by a drier habit, and are a part of an SNC that extends outside of the PSB. Associated understory vegetation included a shrub layer of 20% poison oak, 7% Himalayan blackberry, 5% coyote brush, and 3% smooth dogwood. Herbaceous cover contained 22% iris leaved rush (*Juncus xiphioides*), 4% pennyroyal (*Mentha pulegium*), 3% broad-leafed sweet pea (*Lathyrus latifolius*), and 2% of each of the following: common rush (*Juncus patens*), tall fescue (*Festuca arundinacea*), tall flatsedge (*Cyperus eragrostis*), and blue wild rye (*Elymus glaucus*). The SNC in Location 2 comprises 26,357 square feet (0.61 acres) or 2.6% of the PSB.

Riparian Habitat Assessment and Mapping

Riparian vegetation was mapped at the canopy drip line and characterized using the Rapid Assessment method. Although the riparian vegetation communities are not considered SNCs based on State Rank, they may be regulated by the City, CDFW, or the Regional Water Board.

Broaddus Creek Riparian Community

The Broaddus Creek riparian corridor crosses under the northern portion of the rail within the PSB and runs alongside the northeastern portion of the rail corridor for approximately 450 feet (**Appendix A, Figure 6-1**). The riparian canopy was dominated by white alder (*Alnus rhombifolia*) with cottonwood (*Populus fremontii* ssp*. fremontii*), arroyo willow, and Oregon ash. West of the bridge over Broaddus Creek, the riparian area was invaded by black locust (*Robinia pseudoacacia*, Cal-IPC Limited). The riparian vegetation community is classified as White Alder Woodland Alliance (S4). The Broaddus Creek riparian canopy covers

approximately 27,112 sq. ft (0.62 acres) of the PSB. For additional details on the Broaddus Creek riparian vegetation community, please see Rapid Assessment datasheets WILL004 and WILL005 in **Appendix E.**

Baechtel Creek Riparian Community

The Baechtel Creek riparian corridor crosses the central portion of the PSB (**Appendix A, Figure 6-2**). The riparian canopy was similarly characterized by white alder, arroyo willow, and Oregon ash, with invasive Himalayan blackberry in the understory. The riparian vegetation community is classified as White Alder Woodland Alliance (S4). The Baechtel Creek riparian canopy covers approximately 7,558 sq. ft (0.17 acres) of the PSB. For additional details on the Baechtel Creek riparian vegetation community, please see Rapid Assessment datasheet WILL001 in **Appendix E.**

Haehl Creek Riparian Community

The Haehl Creek riparian corridor crosses the southern portion of the PSB (**Appendix A, Figure 6-3**). The riparian canopy was characterized by red alder (*Alnus rubra*) and arroyo willow, with invasive Himalayan blackberry in the understory. Red alder was distinguished from white alder by the presence of rolled-under leaf margins, double serration, and more acute leaf tips (Baldwin et al. 2012). The Haehl Creek riparian vegetation community is classified as the Red Alder Forest Alliance (S4). The Haehl Creek riparian canopy covers approximately 10,400 sq. ft (0.24 acres) of the PSB. For additional details on the Haehl Creek riparian vegetation community, please see Rapid Assessment datasheet WILL003 in **Appendix E**.

6.4 Aquatic Resources

An aquatic resource delineation was conducted on July 6-8th, 2021; USACE jurisdictional three-parameter wetlands were mapped based on wetland indicative vegetation, hydric soils, and wetland hydrology and three seasonal watercourses also considered USACE jurisdictional as Other Waters were mapped based upon observed ordinary high-water mark (OHWM). The three-parameter wetlands were observed running adjacent to the rail prism on either side. All delineated wetlands and seasonal watercourses drain into Davis Creek, which drains to Outlet Creek, a tributary of the Eel River (a navigable waterway). The total area of three-parameter wetlands mapped within the PSB was 118,994 ft^2 (2.7 acres) and the total area of Other Waters mapped within the PSB was 13,861 ft^2 (0.32 acres). The total area of three-parameter wetlands and Other Waters encompasses 132,855 ft^2 or 3.05 acres, or 12% of the PSB. Please see the Aquatic Resources Delineation Report for details (GHD 2021b).

Additionally, the NWI map identified the three intermittent creeks delineated within the PSB (**Appendix A, Figure 5**). NWI mapped the two northern most intermittent creeks as forested freshwater, or shrub wetland (Broaddus and Baetchel) and one was mapped as riverine (Haehl). See additional details and precise boundaries of observed wetlands and Other Waters in **Appendix A, Figures 5-1 through 5-4** which displays results of the aquatic resources delineation conducted for the Project. See the accompanying Aquatic Resources Delineation Report (GHD 2021b) for additional details of the delineated wetlands and Other Waters.

6.5 Special Status Wildlife

Wildlife Site Visit and Habitat Evaluation Results

The Project centers around an existing railroad track, and is predominantly surrounded by commercial and residential development, with some areas of fallow open land that may be utilized for agricultural production. Suitable habitat for special status species is primarily limited to narrow aquatic and riparian

corridors associated with Broaddus, Baechtel and Haehl Creeks. Valley oak, California black oak (*Quercus kelloggii*), and willows are scattered throughout the PSB. The PSB and BSA are not expected to provide high quality habitat for most sensitive biotic species (due to edge effects associated with development immediately adjacent); however, sensitive species may occur in the immediate vicinity and have potential to traverse the PSB and BSA. See photos in **Appendix C – Site Visit Photographs**.

Observations of species detected during the site visits is provided in **Appendix D – Onsite Wildlife Species List**. All detected species are common (not special status), with the exception of the young-of-the-year steelhead observed in all three creeks. It should be noted that the observed steelhead may be Rainbow Trout, as their phenotype is identical as juveniles. Therefore, all detected species may indeed be common species.

Special Status Wildlife Species

Federally-listed Wildlife Species

Four federally-listed (threatened) wildlife species that are regulated by the USFWS and/or NMFS under the ESA were identified during scoping in the vicinity of the PSB (i.e., the 9-quad search area). Based on habitat evaluations, and a database and literature review, it was determined that the PSB does not provide suitable habitat for one of these species (Humboldt Marten), and justification for exclusion from further consideration is detailed in **Table 6.3**. Three federally-listed wildlife species (anadromous salmonids) have a high potential to occur seasonally and are analyzed in **Table 6.3**.

State Listed or Special Status Wildlife Species

Four state listed wildlife species (including three endangered and one threatened) that are regulated by the CDFW under the CESA were identified during scoping in the vicinity of the PSB (i.e., the 9-quad search area). The species include: Humboldt Marten (endangered), Willow Flycatcher (endangered), Foothill Yellow-legged Frog (endangered) and Coho Salmon (threatened). Two species were excluded from analysis due to lack of suitable late seral forest habitat (Humboldt Marten) and because the northern clade, which includes Willits, of Foothill Yellow-legged Frog is not listed under CESA. The remaining species (Willow Flycatcher and Coho Salmon) are addressed in **Table 6.3**.

An additional 19 special status wildlife species were identified during scoping in the vicinity of the PSB (i.e., the nine-quad search area). Ten special status wildlife species which have a moderate to high potential to occur in the PSB are analyzed in **Table 6.3.** The remaining nine special status wildlife species with no or low potential to occur in the PSB are addressed in **Table 6.3.** See **Appendix D** for a list of species observed within the PSB, all of which are common with the exception of young-of-the-year steelhead (federally threatened), which may or may not be Rainbow Trout (common species) as the phenotype is identical as juveniles.

The results in **Table 6.3** are based on database and literature review and information from the reconnaissance field visit. No protocol-level special status wildlife surveys have been conducted on site.

Table 6.3 Potential for Special Status Wildlife to Occur in the PSB and BSA

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA
Mammals								
Antrozous pallidus	Pallid Bat	None	None	G4	S3	BLM_S; CDFW_SSC; IUCN_LC; USFS_S; WBWG_H	Chaparral; riparian woodland; upper montane coniferous forest; valley & foothill grassland. Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Low potential.** Suitable habitat (grasslands, dry habitats) is available; however, rocky areas are absent. Additionally, given the PSB and BSA are in a developed area, it is unlikely this species would create a roosting site due to the high disturbance potential. The closest occurrence is approximately nine miles southeast located in a structure within mountainous terrain towards Potter Valley, recorded in 2018 (iNaturalist 2021).
Arborimus pomo	Sonoma Tree Vole	None	None	G3	S3	CDFW_SSC; IUCN_NT	North coast coniferous forests; old growth; redwood. North coast fog belt from Oregon border to Sonoma County. In Douglas-fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	**No potential.** Suitable habitat (mature coniferous forest located within the fog belt) does not occur within the PSB or BSA.
Corynorhinus townsendii	Townsend's Big-eared Bat	None	None	G4	S2	BLM_S; CDFW_SSC; IUCN_LC; USFS_S; WBWG_H	Broadleaved upland forest; Chaparral; lower montane coniferous forest; meadow & seep; riparian forest; upper montane coniferous forest; valley & foothill grassland. Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**Moderate potential.** Suitable habitat for this species is available throughout the PSB and BSA. However, given this species is extremely sensitive to human disturbance, and the PSB and BSA is not considered mesic due to the high heat and dry conditions, it reduces the potential for this species to be present. The closest occurrence of this species was recorded in 2015 and is approx. 5.5 miles southwest of the PSB (CDFW 2021a).

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA
Martes caurina humboldtensis	Humboldt Marten	FT	SE	G4G5 T1	S1	CDFW_SSC; USFS_S	North coast coniferous forests; old growth; redwood. Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County.	**No potential.** Suitable habitat (old growth, dense coniferous forest) does not occur within the PSB or BSA.
Pekania pennanti	Fisher	None	None	G5	S2S3	BLM_S; CDFW_SSC; USFS_S	North coast coniferous forests; old growth; riparian forest. Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	**No potential.** Suitable habitat (old growth, dense coniferous forest) does not occur within the PSB or BSA.
Taxidea taxus	American Badger	None	None	G5	S3	CDFW_SSC; IUCN_LC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Low potential.** The PSB and BSA are in a developed area and is therefore unlikely to support abundant prey sources. However, climactic conditions support this species. The closest recorded occurrence of this species is from 1945 and is 17 miles northwest (CDFW 2021a).
Birds								
Accipiter gentilis	Northern Goshawk	None	None	G5	S3	BLM_S; CDF_S; CDFW_SSC; IUCN_LC; USFS_S	North coast coniferous forest. Within, and in vicinity of, coniferous forest. Uses old nests and maintains alternate sites. Usually nests on north slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees.	**Low potential.** Coniferous forest habitat is abundant to the west of the PSB and BSA, however the elevation of this existing habitat is likely too low for this species based upon the tree species they prefer. No coniferous forest habitat exists in the PSB or BSA, and relatively little water is available.
Accipiter striatus	Sharp-shinned Hawk	None	None	G5	S4	CDFW_WL; IUCN_LC	Riparian forest, lower montane coniferous forest. Ponderosa pine, black oak, riparian deciduous, mixed conifer, and	**Low potential.** Marginally suitable habitat exists outside of the PSB and BSA (primarily to the west) for this species. Riparian habitat within the

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA
							Jeffrey pine habitats. Prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.	PSB is less established as compared to what is regionally available. The closest occurrence of this species is six miles west of the PSB (CDFW 2021a).
Elanus leucurus	White-tailed Kite	None	None	G5	S3S4	BLM_S; CDFW_FP; IUCN_LC	Cismontane woodland; marsh & swamp; riparian woodland; valley & foothill grassland; wetland. Rolling foothills and valley margins with scattered oaks & 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 potential.** Suitable habitat (grasslands and meadows) exists within the PSB and BSA. Could forage in open grasslands around the PSB. This species was observed near the BSA in 2019 (iNaturalist 2021).
Empidonax traillii	Willow Flycatcher	None	SE	G5	S1S2	IUCN_LC; USFS_S; USFWS_BCC	Meadow & seep; riparian scrub; riparian woodland; wetland. Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, backwaters, 2000-8000 ft. elevation	**Moderate potential.** Marginally suitable habitat exists for this species within the PSB (less so within the more developed BSA). Numerous sightings of this species have been recorded within one mile of the BSA since 2016 (eBird 2021).
Icteria virens	Yellow-breasted Chat	None	None	G5	S3	CDFW_SSC; IUCN_LC	Riparian forest. Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.	**High potential.** This species could nest in the riparian habitat along the three watercourses within the PSB and BSA. Numerous occurrences of this species have been recorded in the northern extent of the BSA (eBird 2021, CDFW 2021a). Although higher quality suitable habitat exists outside of the PSB and BSA, there is high potential for this species to at least fly over the PSB and potentially nest as well.
Progne subis	Purple Martin	None	None	G5	S3	CDFW_SCC; IUCN_LC	Broadleaved upland forest; lower montane coniferous forest. Inhabits woodlands, low elevation coniferous forest of Douglas-fir,	**Moderate potential.** Suitable natural foraging habitat is not abundant within the PSB and BSA. Preferred nesting habitat is marginally available in BSA

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA
							ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly; also in human-made structures. Nest often located in tall, isolated tree/snag.	and PSB via potential tree cavities and moreso available via human made structures (in the BSA). Occurrences of this species appear in forested habitat to the north and east of the PSB and BSA, and a few sightings of this species are within a mile of the BSA (eBird 2021, CDFW 2021a).
Setophaga petechia	Yellow Warbler	None	None	G5	S3S4	CDFW_SSC; USFWS_BCC	Riparian forest. Riparian plant associations in close proximity to water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	**High potential.** This species could nest in the riparian habitat along the three watercourses within the PSB and BSA. An occurrence of this species within the southern extent of the PSB was recorded in 2021, and numerous sightings of this species within a mile east of the PSB have been recorded (eBird 2021). Although higher quality suitable habitat exists outside of the PSB and BSA, there is high potential for this species to at least fly over the PSB and potentially nest as well.
Reptiles								
Emys marmorata	Western Pond Turtle	None	None	G3G4	S3	BLM_S; CDFW_SSC; IUCN_VU; USFS_S	Aquatic; flowing waters; marshes and swamps. A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.	**Moderate potential.** The riparian and aquatic habitat within the PSB and BSA is suitable for this species. The closest recorded occurrence of this species is from 1993, located three miles northwest of the BSA (CDFW 2021a). This species was also recorded approx. five miles east of the BSA in 2008 (iNaturalist 2021).
Amphibians								
Rana aurora	Northern Red-legged Frog	None	None	G4	S3	CDFW_SCC; IUCN_LC; USFS_S	Klamath/North coast flowing waters; riparian forest. Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. Generally near permanent water, but can be	**Moderate potential.** This species may occur in or near the three creeks or wetlands located within the PSB and BSA. However, there is potential for this species to occur outside of the riparian corridor and wetlands along the railroad alignment because of hot,

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA
							found far from water, in damp woods and meadows, during nonbreeding season.	dry climatic conditions. This species is typically found closer to the coast.
Rana boylii	Foothill Yellow-legged Frog	None	None – within Northern Clade which includes BSA and PSB; (SE outside of Northern Clade).	G3	S3	BLM_S; CDFW_SSC; IUCN_NT; USFS_S	Aquatic; riparian forest; meadows and seeps. Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	**High potential.** Suitable wetland, creek (with cobble substrate) and riparian forest habitat exists in portions of the PSB and BSA (located within and in close proximity to the creeks onsite). There are numerous recently recorded observations of this species within two miles of the BSA, and one occurrence recorded from within the BSA from 2015 (CDFW 2021a, iNaturalist 2021).
Taricha rivularis	Red-bellied Newt	None	None	G2	S2	CDFW_SSC; IUCN_LC	Broadleaved upland forest; north coast coniferous forest; redwood; riparian forest. Coastal drainages from Humboldt County south to Sonoma County, inland to Lake County. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean, rocky substrate.	**Moderate potential.** Suitable wetland, creek (with cobble substrate) and riparian forest habitat exists in portions of the PSB and BSA (located within and in close proximity to the creeks onsite). There are numerous recently recorded occurrences of this species within two miles of the BSA (iNaturalist 2021). One historic recorded occurrence from 1938 exists immediately outside the BSA (CDFW 2021a).

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA
Fish								
Oncorhynchus kisutch pop. 2	Coho Salmon - southern Oregon / northern California ESU	FT	ST	G4T2Q	S2?	AFS_TH	Aquatic; Klamath/north coast flowing waters; Sacramento/San Joaquin flowing waters. Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California. State listing refers to populations between the Oregon border and Punta Gorda, California.	**High potential.** Aquatic habitat exists in the PSB and BSA via Broaddus, Baechtel and Haehl Creeks. Historic observations (1930's to 1970's) of salmonids – particularly steelhead – in these waterways is well documented (Becker and Reining 2009). More recent survey documented Coho Salmon in Baechtel Creek in the late 1980's (CDFW 1995). Although no observations of this species from within the PSB or BSA have been recorded in CNDDB (CDFW 2021a) or iNaturalist (2021), historic accounts demonstrate that there is suitable habitat for this species in Broaddus and Baechtel Creeks. Suitable spawning habitat was noted to have declined in Haehl Creek as of 1987 due to fine sediment (Becker and Reining 2009). Seasonal low flows are a limiting factor for this species to occur in the PSB or BSA during the summer.
Oncorhynchus mykiss irideus pop. 16	Steelhead - northern California DPS	FT	None	G5T2T3Q	S2S3	CDFW_SCC; AFS_TH	Aquatic; Sacramento/San Joaquin flowing waters. Coastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead.	**High potential.** Aquatic habitat exists in the PSB and BSA via Broaddus, Baechtel and Haehl Creeks. Historic observations (1930's to 1970's) of salmonids – particularly Steelhead – in these waterways is well documented (Becker and Reining 2009). More recent survey documented an absence of Steelhead in Baechtel Creek in the late 1980's (CDFW 1995). Although no observations of this species from within the PSB or BSA have been recorded in CNDDB (CDFW 2021a) or iNaturalist (2021), young of the year steelhead (or Rainbow Trout) were

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA
								observed in all three creeks during the April site visit. Additionally, historic accounts demonstrate that there is suitable habitat for this species in Broaddus and Baechtel Creeks. Suitable spawning habitat was noted to have declined in Haehl Creek as of 1987 due to fine sediment (Becker and Reining 2009). Seasonal low flows are a limiting factor for this species to occur in the PSB or BSA during the summer.
Oncorhynchus tshawytscha pop. 17	Chinook Salmon - California coastal ESU	FT	None	G5	S1	CDFW_SCC; AFS_TH	Aquatic; Sacramento/San Joaquin flowing waters	**High potential.** Aquatic habitat exists in the PSB and BSA via Broaddus, Baechtel and Haehl Creeks. Historic observations (1930's to 1970's) of salmonids – particularly Steelhead – in these waterways is well documented (Becker and Reining 2009). More recent survey documented Chinook Salmon in Baechtel Creek in the late 1980's (CDFW 1995). Although no observations of this species from within the PSB or BSA have been recorded in CNDDB (CDFW 2021a) or iNaturalist (2021), historic accounts demonstrate that there is suitable habitat for this species in Broaddus and Baechtel Creeks. Suitable spawning habitat was noted to have declined in Haehl Creek as of 1987 due to fine sediment (Becker and Reining 2009). Seasonal low flows are a limiting factor for this species to occur in the PSB or BSA during the summer.
Mollusks								

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA
Anodonta californiensis	California Floater	None	None	G3Q	S2?	USFS_S	Aquatic. Freshwater lakes and slow-moving streams and rivers. Taxonomy under review by specialists. Generally in shallow water.	**Low potential.** Creeks within the PSB and BSA provide suitable habitat, however this species has not been observed in the PSB or BSA.
Insects								
Bombus caliginosus	Obscure Bumble Bee	None	None	G4?	S1S2	IUCN_VU	Coastal areas from Santa Barbara County to north to Washington state. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	**Low potential.** This species is more common on the coast; however, it is not entirely confined to the coast.
Bombus occidentalis	Western Bumble Bee	None	None	G2G3	S1	USFS_S	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease. Need burrows for nesting.	**Low potential.** Most recent CNDDB observation of this species within the PSB and BSA is from 1958. Few suitable burrows in the compacted rail prism.

Footnotes:

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

Column Header Categories and Abbreviations:

FESA: Listing status under the federal Endangered Species Act (ESA)
FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; FD = Federally Delisted
CESA: Listing status under the California state Endangered Species Act (CESA)
SE = State Endangered; SD = State Delisted; ST = State Threatened.

Global Rank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2021) (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. Subspecies/variety level: "Subspecies/varieties receive a T-rank attached to the G-rank. With the subspecies/varieties, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety" (CDFW 2021b); ? = "Denotes inexact numeric rank" (NatureServe 2021); Q = "Questionable taxonomy that may reduce conservation priority" (NatureServe 2021)

State Rank: State Rank from NatureServe's Heritage Methodology (NatureServe 2020) (ranking according to degree of imperilment in the state (California) - S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA

(often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state; S4 = Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors; S5 = Secure—Common, widespread, and abundant in the state; SNR = State Not Ranked.

Other Statuses (other federal or state listings may include)**:**

AFS_TH (American Fisheries Society Threatened):"a taxon that is in imminent danger of becoming endangered throughout all or a significant portion of its range" (Jelks et al. 2008).

AFS_VU (American Fisheries Society Vulnerable): "a taxon that is in imminent danger of becoming threatened throughout all or a significant portion of its range" (Jelks et al. 2008).

BLM_S (Bureau of Land Management Sensitive): "(1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All Federal candidate species, proposed species, and delisted species in the 5 years following delisting would be conserved as Bureau sensitive species." (CDFW 2021b);

CDF_S (California Department of Forestry and Fire Protection Sensitive): "those species that warrant special protection during timber operations" (CDFW 2020c);

CDFW_FP (CDFW Fully Protected Animal): "This classification was the State of California's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts." (CDFW 2021b);

CDFW_SSC (CDFW Species of Special Concern): "It is the goal and responsibility of the Department of Fish and Wildlife to maintain viable populations of all native species. To this end, the Department has designated certain vertebrate species as 'Species of Special Concern' because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as 'Species of Special Concern' is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long-term viability" (CDFW 2021b);

CDFW_WL (California Department of Fish and Wildlife Watch List): "The CDFW maintains a list consisting of taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status" (CDFW 2021b);

IUCN_LC (International Union for Conservation of Nature Least Concern): "when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened" (IUCN 2012);

IUCN_NT (International Union for Conservation of Nature Near Threatened): "when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future (IUCN 2012);

IUCN_VU (International Union for Conservation of Nature Vulnerable): "when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable…, and it is therefore considered to be facing a high risk of extinction in the wild" (IUCN 2012);

IUCN_EN (International Union for Conservation of Nature Endangered): "when the best available evidence indicates that it meets any of the criteria A to E for Endangered…,and it is therefore considered to be facing a very high risk of extinction in the wild" (IUCN 2012);

MMC_SSC (Marine Mammal Commission Species of Special Concern): no definition available.

NABCI_RWL (North American Bird Conservation Initiative Red Watch List): "species with extremely high vulnerability" (CDFW 2021b);

NMFS_SC (National Marine Fisheries Service Species of Concern): "species about which NOAA's NMFS has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act" (CDFW 2021b);

USFS_S (U.S. Forest Service Sensitive): "plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density and/or significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution" (CDFW 2021b);

USFWS_BCC (U.S. Fish and Wildlife Service Birds of Conservation Concern): "The goal of the Birds of Conservation Concern 2008 report is to accurately identify the migratory and non-migratory bird species (beyond those already designated as Federally Threatened or Endangered) that represent our highest conservation priorities and draw attention to species in need of conservation action" (CDFW 2021b);

Scientific Name	Common Name	ESA	CESA	Global Rank[2]	State Rank[2]	Other Status	Habitat Requirements[1]	Potential to Occur in the PSB and BSA

WBWG_H- (Western Bat Working Group High Priority): "those species considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment" (BCI 1998);

WBWG_LM- (Western Bat Working Group Low Priority): "most of the existing data support stable populations of the species, and that the potential for major changes in status in the near future is considered unlikely. While there may be localized concerns, the overall status of the species is believed to be secure" (BCI 1998);

WBWG_M- (Western Bat Working Group Medium Priority): "a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats" (BCI 1998);

XERCES_IM (Xerces Society Imperiled): species "at high risk of extinction because of highly restricted range, rare populations (often 20 or fewer), steep declines, or other factors" (National Research Council 2007).

Potential to Occur:

No Potential Habitat in and adjacent to the PSB is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Low Potential: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found in the PSB.

Moderate Potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found in the PSB.

High Potential: All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on in the PSB

Present: Detected or documented on-site.

Species Descriptions

The California special status wildlife species determined to have a moderate to high potential of occurring within the PSB or BSA are described in detail here. Species descriptions are divided by taxonomic grouping: bats, other mammals, birds, reptiles, amphibians, fish, and insects.

Bats

Townsend's Big-eared Bat (Corynorhinus townsendii), CDFW Species of Special Concern, Moderate Potential

Townsend's Big-eared Bats are medium-sized bats, distinguished from other co-occurring bat species by their large ears and a two-pronged horseshoe-shaped lump on the muzzle. The species occurs throughout the western U.S. and Canada. In California, the species is found throughout the state with the exception of the high elevations in the Sierra Nevada Mountain Range (CDFW 2016). Townsends' Big-eared Bats are typically associated with coastal Redwood forests, foothill oak woodlands, inland deserts, pinyon-juniper and pine forests, and mixed coniferous-deciduous forests (Erickson et al. 2002, CDFW 2016). The species roosts colonially in a variety of structures including hollow trees, buildings (barns), mines, and lava tubes (CDFW 2016, Erickson et al. 2002). Roost site fidelity is high. Maternity colonies (of females) occur between March and June (CDFW 2016). Males roost singly (Erickson et al. 2002). Females give birth to a single pup per year between May and July. The species winters in mixed sex groups in caves and lava tubes. Townsend's Big-eared Bats feed primarily on moths (Erickson et al. 2002, CDFW 2016).

Birds

White-tailed Kite (Elanus leucurus), CDFW Fully Protected, Moderate Potential

White-tailed Kites are year-round residents in most of California west of the Sierras including the majority of the coastal foothills, Central Valley, and some arid regions such as Kern and Inyo Counties. White-tailed Kites prefer open landscapes at low elevations including marshes, grasslands, oak-woodlands, savannahs, and agricultural land. Nests are typically constructed on habitat edges on the top or upper third of a tree or bush. Nests consist of small sticks, grass, hay, and leaves placed in a variety of tree or shrub species including coastal redwoods (*Sequoia sempervirens*) and Sitka spruce (*Picea sitchensis*). White-tailed Kites feed almost exclusively on small mammals captured via hover hunting. (Dunk 2000).

Willow Flycatcher (Empidonax traillii), State Endangered, Moderate Potential

The Willow Flycatcher is a long-distance neotropical migrant that breeds west of the Cascades in the Sierra Nevada mountains up to southwestern British Columbia. The CDFW listed the species as state endangered in 1990 (CDFG 1991). The species winters in southern Mexico and northern South America. In California, known breeding locations are from Shasta, Kern, Alpine, Inyo, Mono, Santa Barbara, Riverside, and San Diego counties. Willow Flycatchers are late spring migrants with abbreviated breeding seasons of only 70-90 days (Sedgwick 2000). They arrive on their breeding ranges in California in mid-May (Small 1994).

Optimal habitat requirements of Willow Flycatcher include dense willow thickets with low, exposed branches usually near slow moving water, and seeps or standing water typically between 600-2,500 meters in the Sierra Nevada and Cascade Range (Sedgwick 2000, Gaines 2005). Riparian habitat occupied by the Brown-headed Cowbird (*Molothrus ater*) or areas where heavy grazing of willows has occurred from livestock may greatly reduce habitat quality for Willow Flycatchers (Gaines 2005).

On their breeding range, territory size may range from roughly 3 to 5 km (Prescot 1986). Cup nests are created out of twigs, grass, and bark and lined with hair, grass, and feathers. Nest are typically located low

to the ground in willow shrubs and bushes. The species was formerly widespread in California and has declined significantly as a result of riparian habitat loss and degradation (e.g. livestock overgrazing) and cowbird nest parasitism (Gaines 2005).

Yellow-breasted Chat (Icteria virens), CDFW Species of Special Concern, High Potential

The Yellow-breasted Chat occurs as a migrant and summer resident in California primarily from late March to late September and breeds from late April through early August (Shuford and Gardali 2008). The Yellow-breasted Chat breeds in areas of dense shrubbery, including abandoned farm fields, clearcuts, powerline corridors, fencerows, forest edges and openings, swamps, and edges of streams and ponds. Its habitat often includes blackberry bushes. In arid regions of the West it is frequently found in shrubby habitats along rivers. Yellow-breasted Chats nest in low, dense vegetation, approximately one to eight feet above the ground, supported by branches and often by masses of vegetation. They may use nest sites previously used by different individuals, although they rebuild the nest each time.

Purple Martin (Progne subis), CDFW Species of Special Concern, Moderate Potential

Purple Martins are the largest member of the swallow family in North America. They have a short slightly-hooked beak, broad chest and forked tail. Their flight pattern is typical of swallows, short glides with longer alternating flapping. West of the Rockies they largely nest in abandoned woodpecker nest cavities, and in the Pacific Northwest martins use gourds and clusters of single-unit boxes for nesting, as well as natural cavities in trees. Adult Purple Martins arrive to breeding grounds in the winter or spring, depending on the breeding location, and tend to arrive in the proximity of the proposed Project on March 15. Nest building begins about four to six weeks after Purple Martins arrive at their final breeding site. Nests are generally built out of twigs, straw, and mud. Nest building can take three to four weeks to complete. Eggs hatch approximately 15 to 16 days after the second to last egg is laid, and hatchlings fledge approximately 26 to 32 days after hatching. After fledging, juvenile Purple Martins, as well as adults and subadults will congregate at a roost. Large flocks of martins gather to spend the night at these roosts, which are usually situated near water or in trees. Martins will then form smaller groups and begin migration from these roosts. Although individual roosts remain active for six weeks or longer, individual birds may only stay at a roost an average of four weeks. They then begin their long migration back to South America. (PMCA 2021).

Yellow Warbler (Setophaga petechia), CDFW Species of Special Concern, High Potential

The Yellow Warbler occurs principally as a migrant and summer resident in California from late March through early October, and breeds from April to late July (Shuford and Gardali 2008). Yellow Warblers spend the breeding season in thickets and other disturbed or regrowing habitats, particularly along streams and wetlands. The specie breeds throughout northwestern California (including Mendocino County) except at lower elevations along the coast in Mendocino and Sonoma (Shuford and Gardall 2008). They are often found in willow thickets. Within their wintering grounds, Yellow Warblers live in mangrove forests, dry scrub, marshes and forests, typically in lowlands but occasionally up to 8,500 feet elevation. Yellow Warblers build their cup-shaped nests in the vertical fork of a bush or small tree such as willow. The nest is typically within about 10 feet of the ground but occasionally up to about 40 feet.

Reptiles

Western Pond Turtle (Emys marmorata), CDFW Species of Special Concern, Moderate Potential

Pond turtles occur in a variety of permanent and semi-permanent freshwater aquatic habitats including lakes, rivers, ponds, creeks, and marshes. Pond turtles are known to be present in the general vicinity and may occur along the creek banks within the PSB. Breeding can occur on loose soils on south or west facing slopes so a few pond turtles may venture away from the river into the PSB. The species is frequently observed basking on exposed banks, logs, and rocks. Winter activity is possible but limited to unusually warm, sunny days; normally pond turtles are dormant during winter months; dormancy typically involved burrowing into loose substrate above the high water mark (Thompson et al. 2016). Numerous occurrences of this species have been recorded within five miles of the PSB (CDFW 2021a; iNaturalist 2021).

Amphibians

Northern Red-legged Frog (Rana aurora), CDFW Species of Special Concern, Moderate Potential

Northern Red-legged Frogs occur along the west coast of North America from British Columbia to California. The geographic range split between the Northern and California Red-legged Frog species occurs just south of Elk Creek in Mendocino County where both species overlap (CaliforniaHerps 2021, AmphibiaWeb 2020). Northern Red-legged Frogs are typically found near freshwater sources (e.g., wetlands, ponds, streams, etc.). However, they can range widely and inhabit damp places far from water. Northern Red-legged Frogs reproduce in water from December to February in Mendocino County, with some breeding occurring as late as March. Preferred egg laying locations are in “vegetated shallows with little water flow in permanent wetlands and temporary pools” (CaliforniaHerps 2021).

Foothill Yellow-legged Frog (Rana boylii), North Coast Clade not CESA-listed, CDFW Species of Special Concern, High Potential

Foothill Yellow-legged Frogs occur from sea level to elevations of 2,130 meters and range from the Willamette River in Oregon south to the Upper San Gabriel River in California, including the coast ranges and Sierra Nevada Foothills (Stebbins 2003, NatureServe 2021). The species prefers partially shaded, perennial streams with rocky substrate, often near riffles. These rivers and streams are typically bordered by chaparral, riparian habitat, mixed conifer forest, or wet meadows. Streams are usually small to mid-size with shallow pools and slow-moving water (CBD 2012). They are also found at river edges, in calm pools, and vegetated backwaters (CBD 2012, NatureServe 2020). Rocky, cobble substrate (7.5 centimeters or larger) are preferred, particularly for egg laying sites (CBD 2012).

Foothill Yellow-legged Frog populations were historically abundant in Oregon and California, but they have declined or disappeared in more southern and inland portions of their range, with notable population extirpations in southern California (CBD 2012, USFS 2016). Major threats to the species include habitat loss or degradation, introduced predators, aerial pesticide applications, disease, and altered river and stream flow regimes (CBD 2012, NatureServe 2021). Altered stream and flow regimes, related to dam construction and management, can cause high flow releases during the spring and summer. This results in scouring, which washes away eggs and tadpoles from streams and rivers and forces adult frogs on to land, making them more vulnerable to predators (USFS 1997, 2016, NatureServe 2021). Smaller releases may result in egg stranding and desiccation (CBD 2012). In addition, controlled flows allow for the encroachment of riparian vegetation along river and stream banks, reducing gravel bar habitat for frogs (NatureServe 2021). Foothill Yellow-legged Frogs have also lost significant amounts of habitat to dam construction, intense grazing and logging practices (which causes erosion and increased sediment in stream beds), and

urbanization. Climate change may also be contributing to habitat loss (USFS 1997, CBD 2012, USFS 2016). On top of this, introduced predatory fish species and bullfrogs have impacted frog populations (USFS 1997, NatureServe 2021). There is also evidence that air-borne pesticides may be negatively impacting Foothill Yellow-legged Frog populations (NatureServe 2021). Chytrid fungus has been detected in this species and is known to reduce growth in metamorphosed frogs (USFS 1997, NatureServe 2021).

Red-bellied Newt (Taricha rivularis), CDFW Species of Special Concern, Moderate Potential

The Red-bellied Newt is one of four medium-sized newt species within the *Taricha* genus, endemic to California. Their range is limited to northern coastal portions of the state in Humboldt, Lake, Mendocino, and Sonoma counties (AmphibiaWeb 2021, CaliforniaHerps 2021). They typically occur in streams and rivers in coastal woodlands and redwood forests (CaliforniaHerps 2021).

They are generally most active at night although they can be found during the day throughout the breeding season and rainy weather (CaliforniaHerps 2021). Adults migrate to breeding grounds seasonally in February to March as high winter water levels recede, with males arriving several weeks before females (AmphibiaWeb 2021, CaliforniaHerps 2021). Breeding occurs March to May in rocky flowing streams, avoiding pond and stagnant water (AmphibiaWeb 2021). Eggs are laid in a flattened mass, typically consisting of 10 eggs, beneath rocks or on submerged roots (CaliforniaHerps 2021). Larvae remain in the stream until metamorphosing in the late summer or early fall. After metamorphosis, juveniles exit their aquatic habitats and live primarily underground until becoming sexually mature (AmphibiaWeb 2021, CaliforniaHerps 2021). Adults are terrestrial except during their aquatic breeding period. Aboveground activity occurs from October to February (AmphibiaWeb 2021). Individuals reach sexual maturity at 4-6 years of age, and can live to 20-30 years in age (CaliforniaHerps 2021). They are generalist carnivores (AmphibiaWeb 2021).

Fish

Coho Salmon – southern Oregon/northern California Evolutionary Significant Unit (ESU) (Oncorhynchus kisutch), Federally Threatened, State Threatened, High Potential

The southern Oregon/northern California coast Coho Salmon ESU was federally listed as threatened effective June 5, 1997 (62 FR 33038). This ESU is defined as all Coho Salmon naturally produced in streams between Punta Gorda in northern California, Humboldt County and Cape Blanco in southern Oregon. This listing was reaffirmed effective June 28, 2005 (70 FR 37160). Coho Salmon between the Oregon-California border and Punta Gorda were listed as threatened under CESA in 2002. Creeks within the PSB are within the Eel River watershed, which drains into the Pacific Ocean in Humboldt County.

Most Coho Salmon return to their natal streams to spawn after two years in the ocean during the fall and early winter, but some male individuals only spend one years at sea and then return to their natal spawning streams (known as “jack males”). Coho Salmon spend approximately the first half of their life rearing and feeding in streams and freshwater tributaries and the remaining half of their lifetime foraging in estuarine and marine waters of the Pacific Ocean.

Eggs incubate for one to one and a half months during winter. Fry emerge and occupy shallow areas with vegetative cover. Juvenile Coho Salmon rear in freshwater for over a year (some for two years) before migrating to the ocean in spring (Weitkamp et al. 1995). Juveniles and yearlings spend various amounts of time in freshwater/estuary transition zones. Length of stay by an individual averages about one to two months, with spring being the heaviest time of use. Freshwater habitat requirements for juvenile Coho Salmon include cool water temperatures (12-14 ºC is optimal, but will survive at maximum weekly maximum

temperatures <18 ºC), clear water, riparian vegetation that provides shade, clean silt-free gravel for spawning, in-stream large woody debris, availability of food (invertebrates) (Moyle 2002).

Population declines and extirpations in individual streams and tributaries have occurred due to widespread degradation of freshwater habitats from activities such as timber harvest, road building, grazing and mining activities, urbanization, stream channelization, dam construction, wetland filling or draining, beaver trapping, and water withdrawals and diversions for irrigation (NOAA Fisheries 2011). These activities have resulted in changes to channel morphology and substrate, loss and degradation of estuaries, wetlands, and riparian areas, declines in water quality (e.g., elevated pH and water temperatures, reduced dissolved oxygen, altered stream fertility and biological communities, and toxics), altered stream flows, and fish passage impediments such as dams and road crossings (NOAA Fisheries 2011).

Steelhead – Northern California Designated Population Segment (Oncorhynchus mykiss irideus), Federally Threatened, High Potential

The Northern California Steelhead (northern California DPS) was listed as threatened effective August 7, 2000 (65 FR 36074). This coastal Steelhead DPS occupies river basins from Redwood Creek in Humboldt County to the Gualala River (near the Mendocino/Sonoma County line). Both summer and winter-run steelhead are included in this DPS, as NMFS recently announced that a petition to list summer-run as a unique DPS was unwarranted (85 FR 6527). Creeks within the PSB are within the Eel River watershed, which drains into the Pacific Ocean in Humboldt County.

Steelhead spend their adult lives in marine environments, returning to freshwater at the age of four or five to spawn, usually in their stream of origin. Steelhead is the anadromous form of Rainbow Trout, although steelhead are more similar to Pacific salmon than trout in their ecological requirements. Unlike salmon, steelhead do not necessarily die after spawning. Eggs are deposited in redds constructed in gravel, and (for winter run fish) hatch after three to 14 weeks in later winter through spring. The hatchlings, or alevins, emerge from the gravel after an additional two to five weeks (Moyle 2002). During the egg and alevin stages, survival depends in part on the presence of clean, well-oxygenated gravel (excessive siltation contributes to mortality at these stages) (Barnhart 1991, Stillwater Sciences 2006). Juveniles remain in fresh water for one or two years before returning to saltwater, with emigration typically occurring from March through June. A second year of growth is thought to contribute to a much higher probability of survival in the open ocean (Stillwater Sciences 2006).

In the Northern California DPS, the decline of steelhead has been attributed to factors such as watershed disturbances, including logging on steep slopes, grazing, road building, water diversions, and severe habitat degradation caused by timber harvest and intensive agricultural practices. These factors have resulted in decreased flows, loss of riparian habitat, channel widening, and increased siltation and water temperatures. Despite this decline, North Coast rivers and streams have the greatest amount of Steelhead habitat in California. The most abundant populations of steelhead are in the Klamath/Trinity River system (Barnhart 1991, Stillwater Sciences 2006).

Spring/summer, fall, and winter run steelhead occur in the Eel River and its tributaries. Steelhead are the most widely distributed salmon in the South Fork Eel River Basin (CDFG 1997, Yoshiyama and Moyle 2010, Eel River Forum 2016, CWPAP 2014). Summer Steelhead enter freshwater in the spring and summer months, hold in the mainstem and Middle Fork Eel River, and then spawn in fall. Both winter-run and summer-run Steelhead are found in the Eel River, although summer steelhead are rare. Steelhead numbers in the Eel River watershed have declined considerably in the last century, with present population estimates at about 10% of historic totals (Yoshiyama and Moyle 2010). Peak spawning in the South Fork Eel occurs in late February but extends through May (Coastal Watershed Planning and Assessment

Program 2014). Young of the year steelhead (or Rainbow Trout) were observed in all three creeks within the PSB in April 2021.

Chinook Salmon – California Coastal ESU (Oncorhynchus tshawytscha), Federally Threatened, High Potential

The California Coastal ESU of Chinook Salmon was listed by the Federal Government as a threatened species on September 16, 1999 (64 FR 50394) and reaffirmed on June 28, 2005 (70 FR 37160). California Coastal Chinook Salmon are a distinct population of Chinook Salmon that reside from Redwood Creek in Humboldt County, south through the Russian River in Sonoma County.

The largest of the anadromous Pacific salmon, with mature fish reaching lengths of 1 m or more, Chinook Salmon typically spend 2-4 years or more at sea, and migrate as adults from the ocean into the freshwater rivers of their birth in order to spawn. California Coastal Chinook Salmon spawn and rear in coastal and interior rivers in Northern California. Like other Pacific salmon, Chinook Salmon are semelparous (die after spawning). Ocean-type Chinook (fall run) rear for less than one year in freshwater, while stream-type Chinook (spring run) remain in freshwater for one year or more before emigrating from April to July to forage in coastal and marine zones of California for two to five years (Healey 1991).

Peak spawning is typically mid to late December and continues through mid-January. The ideal temperature range for rearing, smolting, and outmigrating Chinook juveniles appears to be 50° to 55° F (Rich 1997). Juvenile Chinook Salmon typically migrate to the estuary as smolts within the first 3-6 months of life; peak smolt migration typically occurs in April and May.

Critical Habitat

Critical habitat within the PSB is designated for the three federally-listed fish species considered as follows:

– Critical habitat was designated for SONCC Coho Salmon, effective June 4, 1999. Critical habitat includes all accessible reaches between and including the Mattole River (California) and Elk River (Oregon) (64 FR 24049). This designation encompasses Broaddus, Baechtel and Haehl Creeks within the PSB.
– Critical habitat was designated for the northern California Steelhead DPS effective March 17, 2000 (65 FR 7764). All accessible estuaries, rivers, and tributaries within this DPS's range are included within the area designated as critical habitat. This designation encompasses Broaddus, Baechtel and Haehl Creeks within the PSB.
– Critical habitat was designated for Coastal California ESU Chinook Salmon effective January 2, 2006. Designated critical habitat includes riverine and estuarine habitat in Humboldt, Trinity, Mendocino, Sonoma, Lake, Napa, Glenn, Colusa, and Tehama counties (70 FR 52487). This designation encompasses Broaddus, Baechtel and Haehl Creeks within the PSB.

No in-water work is proposed; however, work is proposed above and adjacent to the waterways. With implementation of seasonal work windows and BMPs, as described in **Section 7.1**, the Project will have no substantial effect on federally-designated critical habitat for federally-listed anadromous salmonids.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) requires that Essential Fish Habitat (EFH) be identified for all federally managed species including all species managed by the Pacific Fisheries Management Council (PFMC). EFH has been defined for the purposes of the MSFCMA as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." NOAA Fisheries has further added the following interpretations to clarify this definition:

– “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate;
– “Substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities;
– “Necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and
– “Spawning, breeding, feeding, or growth to maturity” covers the full life cycle of a species.

Adverse effect means any effect that reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), or site-specific or habitat-wide effects, including individual, cumulative, or synergistic consequences of actions.

The PFMC is responsible for managing commercial fisheries resources along the coast of Washington, Oregon, and California. The PFMC is “guided by the principle that there should be no net loss of the productive capacity of marine, estuarine, and freshwater habitats that sustain commercial, recreational, and tribal salmon fisheries beneficial to the nation” (PFMC 2021). EFH applies to species within the PSB for the proposed Project. Under the MSFCMA, Broaddus, Baechtel and Haehl Creeks are designated as EFH within the Pacific Coast Salmon FMP (encompasses Chinook Salmon and Coho Salmon). Steelhead is considered in the Pacific Coast Salmon FMP, however not for EFH but rather as a separate management measure prohibiting Steelhead fishing within the Economic Exclusion Zone (which extends 200 nautical miles from the coast) unless licensed. No other management measures are within the FMP for steelhead.

The Pacific Coast Salmon FMP (as amended) was created to manage commercial and recreational salmon fisheries along the west coast of the U.S. In addition, the plan designates five Habitat Areas of Particular Concern (HAPCs), which include complex channels and floodplain habitats, thermal refugia, spawning habitat, estuaries, and marine and estuarine submerged aquatic vegetation (SAV) (PFMC 2016).

According to the PFMC’s FMP, adverse effects to EFH may include “direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH” (PFMC 2016).

No effects would occur to HAPCs, as none are present in the small portions of Broaddus, Baechtel or Haehl Creeks that occur within the PSB. In addition, no in-water work would occur, so no impacts to channel structure, sediment, or hydrology would occur. However, work would occur over and adjacent to portions of Broaddus, Baechtel or Haehl Creeks, and as a result of these construction activities, the following adverse effects could potentially occur to Coastal California Chinook Salmon and SONCC Coho Salmon EFH:

– Increased Turbidity and Suspended Sediment
– Contaminant Spills
– Riparian Habitat Alternation

Construction activities would not include in-water work, however would include work on top of and adjacent to the onsite creeks (for bridge installation), including riparian vegetation removal. Project activities are localized and temporary and, with implementation of typical stormwater and pollution prevention best management practices (BMPs) and riparian habitat revegetation, are not expected to result in any long-term or significant impacts to water quality. Impacted vegetation would be replaced at acceptable ratios, to be approved by resource agencies during Project permitting. Temporary habitat degradation would be remediated via replaced and potentially expanded riparian habitat.

Due to the nature of the Project, there is a potential for adverse effects to CC Chinook Salmon and SONCC Coho Salmon EFH from potential sediment or contaminant releases into the intermittent stream or, 0.25 miles downstream. However, no in-water work would occur, and activities adjacent to Broaddus, Baechtel and Haehl Creeks would be of a short duration. In addition, avoidance and minimization measures (see Section 7) would be implemented to ensure that the Project avoids and/or minimizes any adverse effects. With implementation of these measures, the Project would have no adverse effect on EFH.

7. Summary of Potential Impacts and Avoidance and Minimization Measures

7.1 Proposed Avoidance and Minimization Measures

In order to construct the trail, ground disturbance (excavation), vegetation removal along the NCRA right of way and within the riparian corridor (to enable bridge installation), noise and vibrational impacts, and discharge of sediment or other inputs to receiving waters are anticipated. Therefore, it can be expected that impacts to wetlands and Other Waters (via filling), wildlife species, identified SNCs, riparian habitat, and potentially special-status plants are reasonably foreseeable to occur. With inclusion of the following measures, impacts to biological resources will be reduced. The proposed measures would be included in and expanded upon in the forthcoming CEQA document after more Project impacts are determined, to more accurately tailor measures to impacts.

Plants

As mentioned in Section 6.2, one plant specimen was identified as either being North Coast semaphore grass, a state-listed (threatened) species, or Davy's semaphore grass, which is a limited distribution CRPR 4.3 species. Further coordination with CDFW is recommended to confirm the identity of the specimen within the area it was observed. Regardless of the species identification, Project design should avoid the area where the specimen was collected, if feasible. If the species is the state listed North Coast semaphore grass, and avoidance is not feasible, then compliance with CESA would be required, which would likely include an incidental take permit authorization from CDFW and associated mitigation at a ratio to be determined in coordination with CDFW. The following measures are recommended for inclusion into environmental documentation to reduce potential impacts to special status plants.

Measure BIO-1: Protect Potential North Coast Semaphore Grass

Coordination with CDFW shall occur in 2022 to determine the semaphore grass specimen observed during the 2021 botanical survey (conducted in April and July 2021), which is believed to be either North Coast semaphore grass (CESA threatened) or Davy's semaphore grass (limited regional distribution CRPR 4.3). If the specimen is a CESA-listed species, appropriate consultation, compliance and mitigation will be achieved in coordination with CDFW, and a restoration and monitoring plan would be produced to meet specific success criteria for CESA listed species. If the species is considered special status (and not CESA listed), it will be avoided as much as feasibly possible.

Measure BIO-2: Protect Special Status Plants

If more than three years pass between the existing botanical survey (first survey completed in April 2021 and second survey completed in July 2021), then the PSB shall be re-surveyed for special-

status plant species prior to construction occurring. Up to two surveys may occur and shall be completed during the appropriate blooming time (spring and/or summer) for the target species prior to construction.

If surveys determine that special status species (CRPR 1 or 2, or CRPR 3 or 4 species with regionally limited distribution) are present within the PSB, these plants shall be avoided to the extent feasible. If avoidance is not feasible, they shall be conserved by measures appropriate for the individual species which may include methods such as plant relocation, seed collection and/or nursery plant propagation for reestablishment in suitable habitat as close to the impact as is feasible. A restoration and monitoring plan to meet specific success criteria for reestablished plants shall be developed in coordination with CDFW.

With inclusion of Measures BIO-1 and BIO-2, potential impacts to special status plants will either be avoided or minimized. If the Project cannot avoid North Coast semaphore grass or other special status plant species, then a plan for mitigation such as plant relocation, seed collection, nursery propagation and reestablishment in suitable habitat with appropriate monitoring shall be developed in coordination with CDFW.

Wildlife

Special status wildlife species have the potential to be adversely affected by the Project due to a temporary increase in noise and vibrations during construction, temporary habitat displacement, and/or temporary decrease in habitat quality. The following measures are recommended for inclusion into environmental documentation to avoid or reduce impacts to special status wildlife species.

Special Status Bats

Habitat for bats (tree cavities, loose bark, riparian forest, creek crossing rail infrastructure, etc.) is present in the PSB (based on site visits). Trees and vegetation in the PSB may provide habitat for a variety of bat species. Construction of the Project may adversely impact special status bat species through the removal or modification of trees and/or vegetation, ground disturbance, as well as potential noise disturbance. One special status bat, the Townsend's Big-eared Bat, has moderate potential to occur within the PSB. To reduce potential impacts on this species and other special status bats that may occur in the PSB, the following measure is recommended.

Measure BIO-3: Protect Special Status Bats

- Remove confirmed or presumed-occupied bat roost habitat only during seasonal periods of bat activity (when bats are volant, i.e. able to leave roosts) between March 1 and April 15 or September 1 and October 15, when evening temps rise about 45 F, and when no rainfall greater than ½ inches has occurred in the last 24 hours.
- If trees or structures cannot be removed during the volant period, i.e. Project activities occur during the bat maternity season which generally occur April 16th through August 30th, a qualified bat biologist shall conduct surveys within suitable habitat for special status bats. Survey methodology shall include visual examination with binoculars and may optionally utilize ultrasonic detectors to determine if special status bat species utilize the vicinity.
  - Surveys shall be conducted by a qualified biologist within seven days prior to construction in any areas where potential maternity roosts may be disturbed/removed. The preconstruction surveys for bats may coincide with pre-construction surveys for other animals.
  - Surveys shall include a visual inspection of the impact area and any large trees/snags with cavities or loose bark or crevices within infrastructure. If the presence of a maternity roost is confirmed, an

appropriate buffer distance would be established in consultation with CDFW to ensure that construction noise would remain below disturbance thresholds for bats. If no bat utilization or roosts are found, then no further study or action is required. If bats are found to utilize the PSB, or presence is assumed, a bat specialist should be engaged to advise the best method to prevent impact.

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

With inclusion of measure BIO-3, potential impacts to special status bats would either be avoided or minimized.

Special Status Terrestrial Mammals

No special status terrestrial mammals have moderate or high potential to occur within the PSB, therefore no measures are proposed at this time to offset potential impacts because special status species are unlikely to be affected by the Project.

Nesting Birds

Numerous special status birds were found to have a moderate or high potential to occur within the PSB, either for foraging or nesting, or both. To protect nesting special status birds, as well as migratory and common bird species that are nesting, the following measure is recommended for inclusion into environmental documentation to reduce potential impacts to said species.

Measure BIO-4: Protect Special Status, Migratory and Nesting Birds

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

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

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

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

With inclusion of measure BIO-4, potential impacts to special status nesting birds, migratory or common nesting birds would either be avoided or minimized.

Willow Flycatcher, a CESA-listed species, was found to have moderate potential to occur within the PSB and BSA. The Project will include removal of riparian vegetation, trees along the rail right of way, and increased noise during construction. To determine whether this species is present, and potential associated future protective measures the following measure is recommended for inclusion into Project planning.

Measure BIO-5: Protect Willow Flycatcher

Prior to Project permitting, a survey will be implemented to evaluate Willow Flycatcher habitat within the PSB. The results of this survey will be utilized to determine the appropriate level of CESA consultation with CDFW to either avoid or mitigate for potential impacts to this species. Should mitigation be considered appropriate by CDFW, a separate mitigation plan and/or pre-construction survey plan to avoid or reduce impacts will be developed in coordination with CDFW.

With inclusion of Measure BIO-5, the presence or absence of suitable Willow Flycatcher habitat would be determined, which would inform the appropriate pathway for CESA review.

Special Status Amphibians and Reptiles

Several special status amphibians and one reptile were found to have a moderate or high potential to occur within the PSB. Although the proposed bridge installations across Broaddus, Baechtel and Haehl Creeks are planned to occur well above the OHWM, the bridge installations have the potential to crush or bury amphibian and reptile species, and/or adversely affect water quality (habitat). No dewatering is proposed to facilitate bridge installation. In addition, elevated levels of noise may mask species calls during the breeding season (some species call during both the day and night). Although habitat quality within the PSB is low compared to nearby suitable habitat, identified special status amphibians and reptiles have the potential to also utilize wetland habitats or grasslands within the PSB. To protect special status amphibians and reptiles, the following measure is recommended for inclusion into environmental documentation to avoid or reduce potential Project-related impacts.

Measure BIO-6: Protect Special Status Amphibians and Reptiles

No more than one week prior to commencement of ground disturbance within 50 feet of suitable reptile and/or amphibian habitat (e.g., creeks, riparian areas, wetlands, damp meadows), a qualified biologist shall perform a pre-construction survey for Western Pond Turtles, Northern Red-legged Frogs, Foothill Yellow-legged Frogs, or Red-bellied Newt and shall relocate any individuals or egg masses that occur within the work-impact zone to nearby suitable habitat.

In the event that a Western Pond Turtle, Northern Red-legged Frog, Foothill Yellow-legged Frog or Red-bellied Newt (or other special status amphibian or reptile) is observed in an active construction zone, the contractor shall halt construction activities in the immediate area where observed and the turtle or shall be moved to a safe location in similar habitat outside of the construction zone.

With inclusion of measure BIO-6, potential impacts to special status amphibians or reptiles would either be avoided or minimized.

Special Status Fish

No in-water work or dewatering is proposed as part of this Project, however construction over and within 100 feet of Broaddus, Baechtel and Haehl Creeks would occur during bridge installations. Implementation of best management practices to reduce erosion, dust, and potential for polluted run-off into Broaddus, Baechtel and Haehl Creeks would be implemented to minimize impacts to fish and aquatic resources. The following measures are recommended for inclusion into environmental documentation to avoid or reduce potential Project-related impacts to fish.

Measure BIO-7: Best Management Practices to Protect Creek Water Quality and Wetlands

The following activities shall be implemented during construction:

- No construction activities shall occur during or within 24-hours following a rain event.
- Stormwater and general pollution prevention BMPs shall be implemented to reduce potential water quality degradation, dust, or erosion to areas adjacent to construction activities.
- Exclusion fencing shall be installed around the three creeks, and wetlands and SNCs to be avoided. The exclusion fencing locations shall be included on the 100% design planset for construction.
- Equipment shall be cleaned of deleterious materials before being delivered to the job site.
- Equipment shall be staged and materials shall be stockpiled outside riparian habitat and wetlands.
- Impacts to herbaceous cover shall be offset by reseeding any unvegetated and impacted areas with a suitable seed mixture post-construction.
- Any construction equipment operating adjacent to or over a stream shall be inspected daily for leaks. Any oil, fuel, and grease residue that has the potential to fall from machinery shall be removed and properly disposed of.
- Spill containment booms shall be available on-site at all times during construction operations and/or staging of equipment or during fueling when work occurs over live waterbodies (such as during bridge installations).
- Fueling trucks shall at all times be equipped with sealed spill kits.

With incorporation of Measure BIO-7, impacts to special status fish and aquatic habitat would be avoided or minimized.

SNC and Riparian Habitat

It is anticipated that a SNC (valley oak woodland alliance) and riparian habitat will be adversely affected during construction due to vegetation removal for trail and bridge installation. This habitat will be replaced where feasible, and thus those impacts would be considered temporary. Revegetation details will be completed during Project design, CEQA and permitting. For permanent impacts to SNC and riparian habitat, the following measure is recommended for inclusion into environmental documentation to offset impacts.

Measure BIO-8: Avoid and Offset Permanent Impacts to SNC and Riparian Habitat

Where possible, impacts to SNC and riparian habitat shall be avoided. To offset permanent unavoidable impacts to SNC and riparian habitat, revegetation of SNC and riparian habitat shall occur as close to the area of impact as feasible. Species shall be equivalent to the species composition of the impacted SNC, and riparian revegetation shall be comprised of California native and regionally appropriate species. The planting ratio shall be at least one to one and to the satisfaction of jurisdictional resource agencies.

With incorporation of Measure BIO-8, permanent impacts to SNC and riparian habitat would be offset through plantings and reduced to avoid and minimize potential impacts.

Wetlands and Other Waters

Where possible, impacts to wetlands and Other Waters would be avoided (see **Appendix A Figures 5, 5-1 through 5-4** for NWI and delineated wetlands and Other Waters within the PSB). It is anticipated that wetlands may be adversely affected by the Project during construction via excavation and trail building (wetland fill). Unavoidable impacts to wetlands will be addressed during Section 404 permitting. It is expected that mitigation for wetland impacts will be addressed via wetland establishment within or as close to the Project as possible. Details of proposed wetland mitigation and monitoring (and any other required mitigation to account for adverse impacts to biological resources) will be addressed in a Habitat Mitigation and Monitoring Plan or similar document during Project permitting.

8. Conclusion

Based on surveys, suitable habitat, and nearby occurrence records, fourteen special status plants have moderate to high potential to occur within the PSB (one of which may be a CESA-listed species). Measures BIO-1 and BIO-2 are recommended to determine whether a CESA-listed species is present, and to protect special status plants.

One special status mammal, five special status bird species (one of which is CESA-listed), one special status reptile, three special status amphibians, and three special status fish (all of which are ESA-listed, and one of which is also CESA-listed) have moderate to high potential to occur within or directly adjacent to the PSB. With implementation of the measures discussed above potential Project-related impacts to these species would be avoided or minimized. More specific measures would likely be developed in subsequent environmental review (CEQA) and permit applications. All permitting conditions would be fully incorporated into the final PS&E for the Project.

9. Scope and limitations

This report has been prepared by GHD for City of Willits and may only be used and relied on by City of Willits for the purpose agreed between GHD and City of Willits as set out in Section 1 of this report.

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

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

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

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer to section 10 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

10. Assumptions

Conclusions for this BRR were drawn from historic surveys and studies, as well as web-based sensitive species database and literature searches, field surveys and site visits. As these studies/surveys only serve as a snapshot of conditions during a short time period, they may not accurately reflect actual occurrence of species presence in the Project vicinity at a given time. Therefore, conclusions in this BRR have been based more on the assumption of presence or non-presence given existing habitat in the PSB and BSA, and impact minimization measures have been developed accordingly. In addition, all determinations herein were based on the current Project footprint, known as the PSB (Appendix A, Figure 2, and 2-1 through 2-4) and proposed Project Description. If the Project footprint or construction methods change significantly prior to Project implementation, determinations would need to be revisited, to ensure that they are still accurate.

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12. Report Preparers

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Rose Dana, Botanist, Author

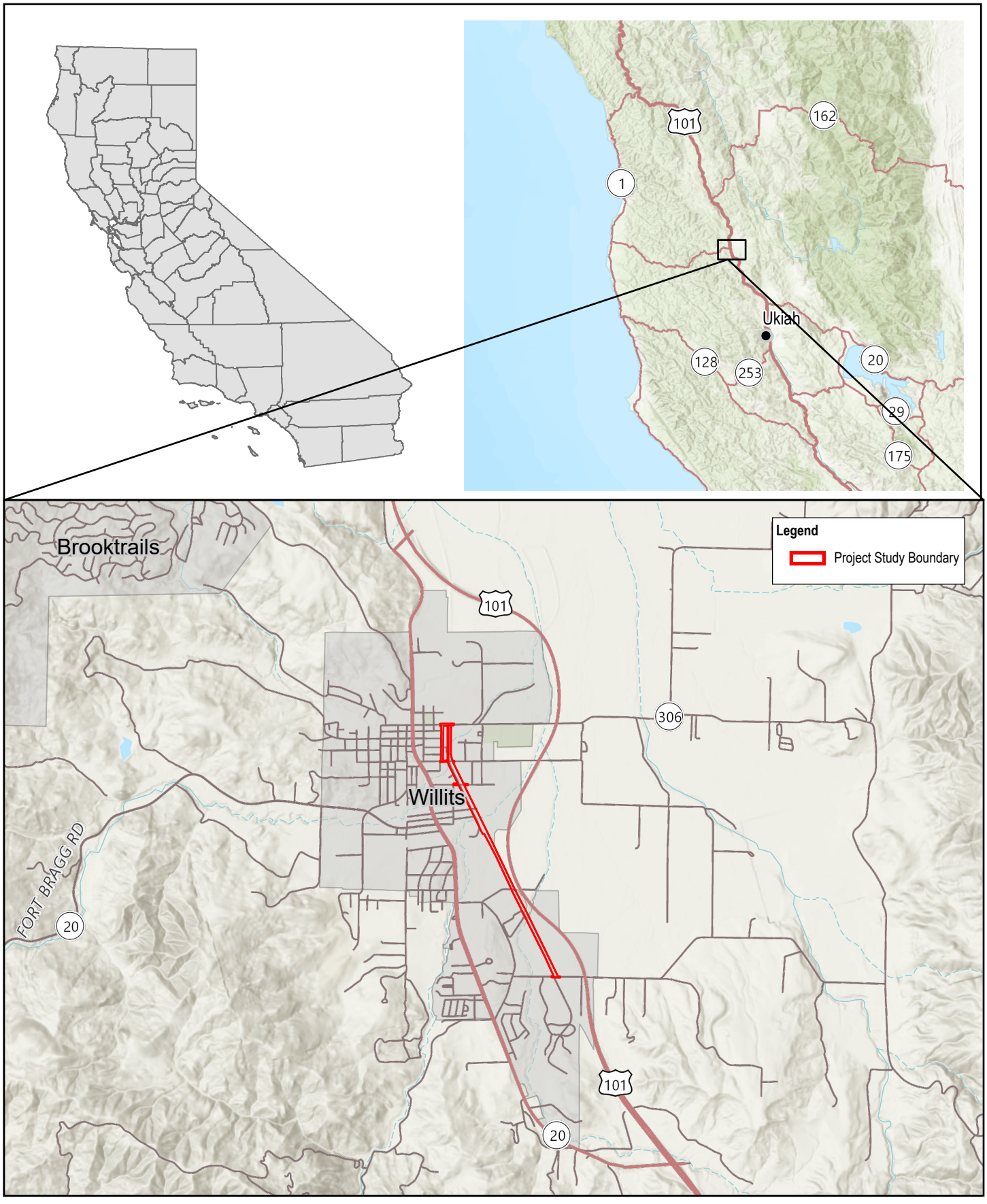
Kelsey McDonald, Plant Ecologist, Reviewer and Contributor

Andrea Hilton, Environmental Planner, Reviewer

Brian Bacciarini, Environmental Planner, Reviewer

Appendix A

Figures



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Miles

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City of Willits
Willits Rail Trail Project

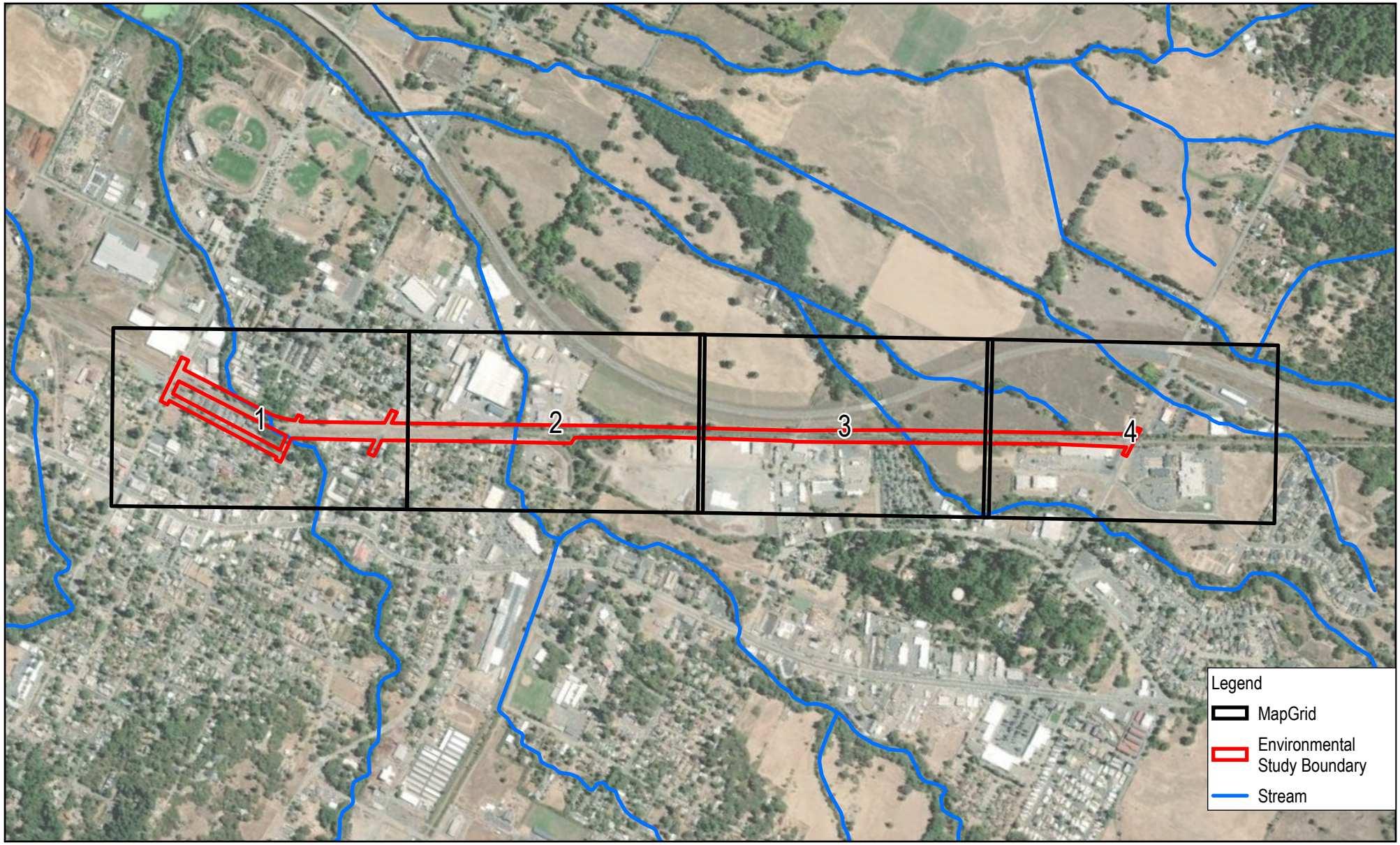
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Revision No. -
Date 1/10/2022

Vicinity Map

FIGURE 1

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City of Willits
Willits Rail Trail Project

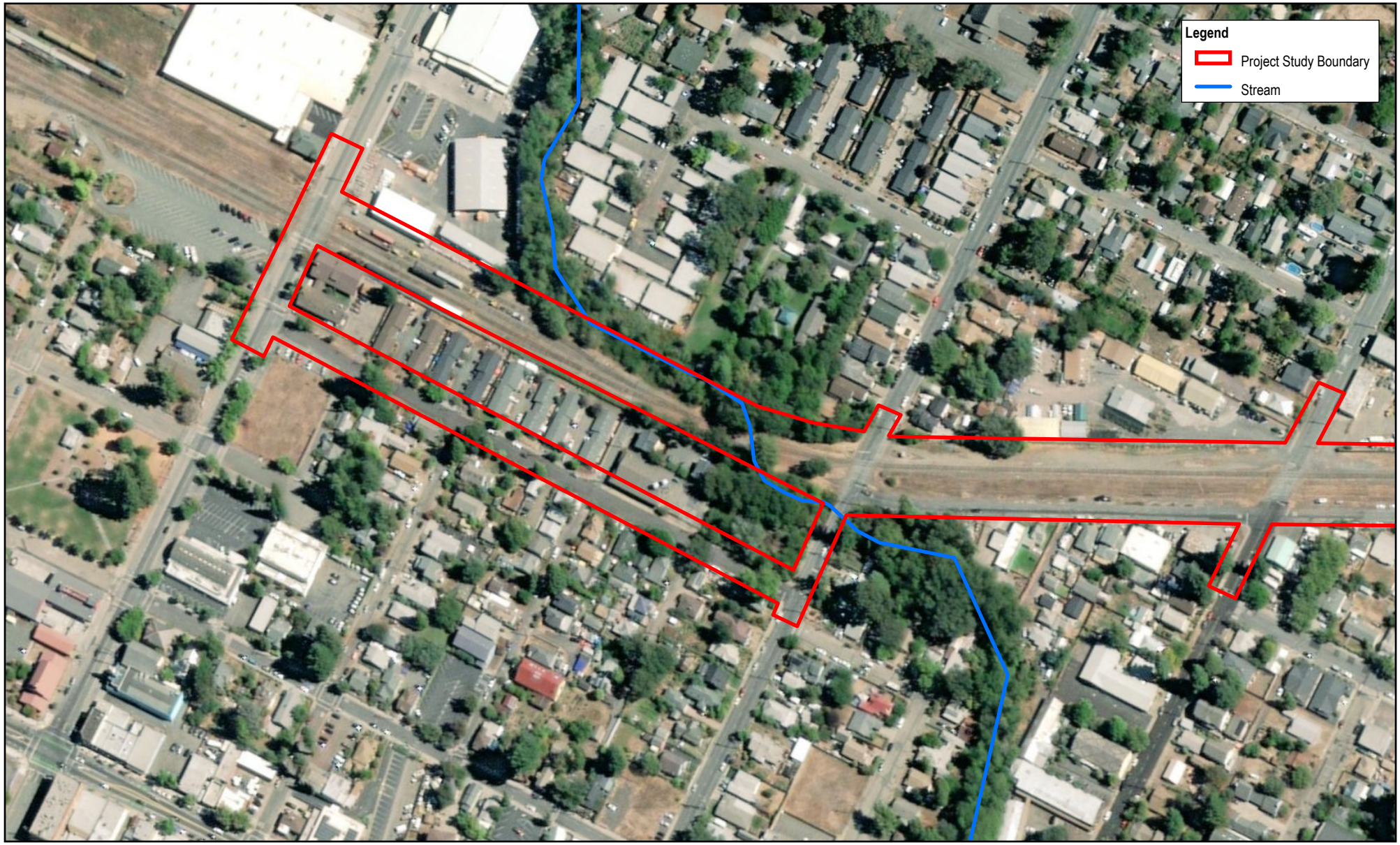
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Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
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Date **1/10/2022**

Study Boundary

FIGURE 2-1

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2-2

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City of Willits
Willits Rail Trail Project

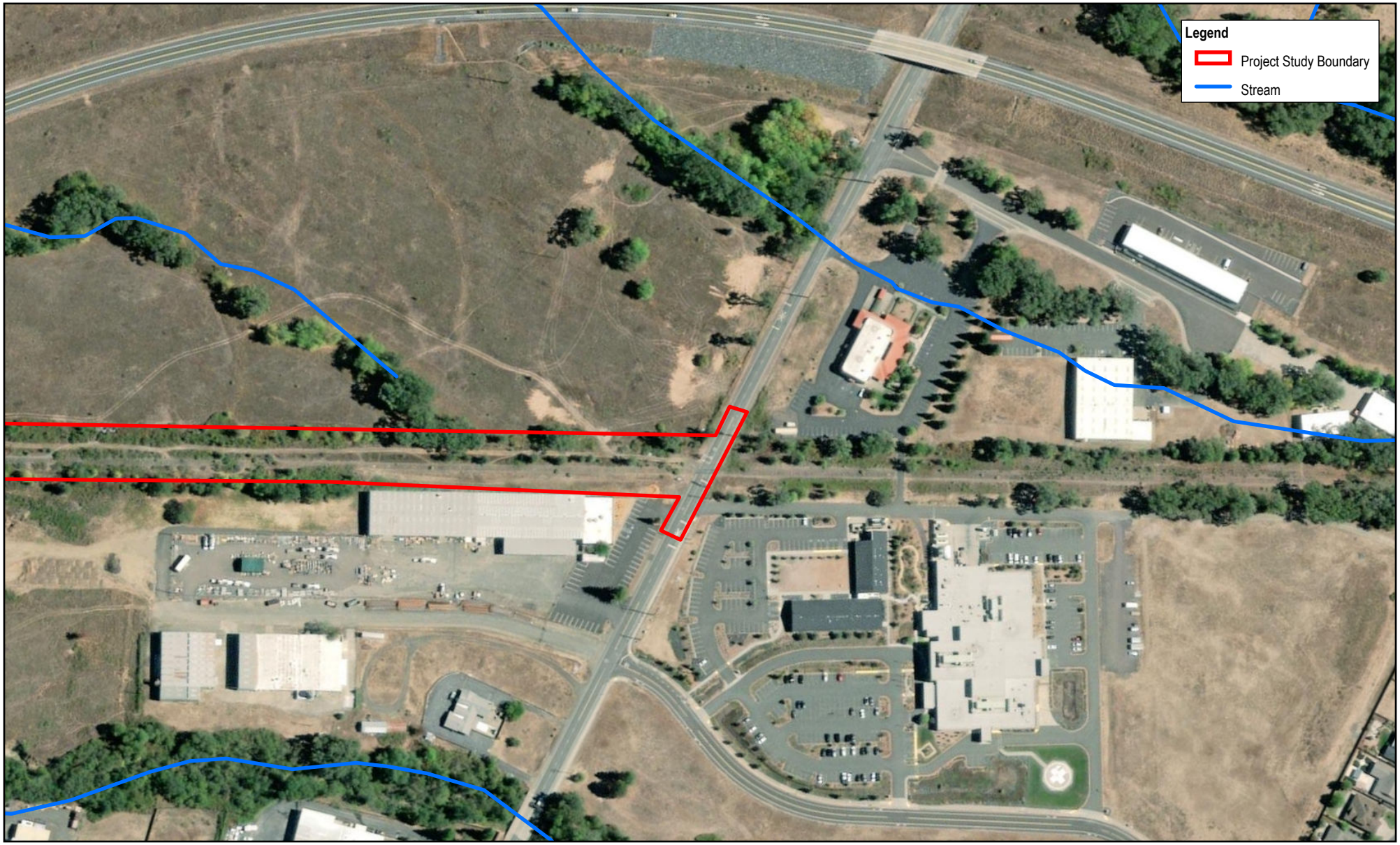
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Study Boundary

FIGURE 2-3

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City of Willits
Willits Rail Trail Project

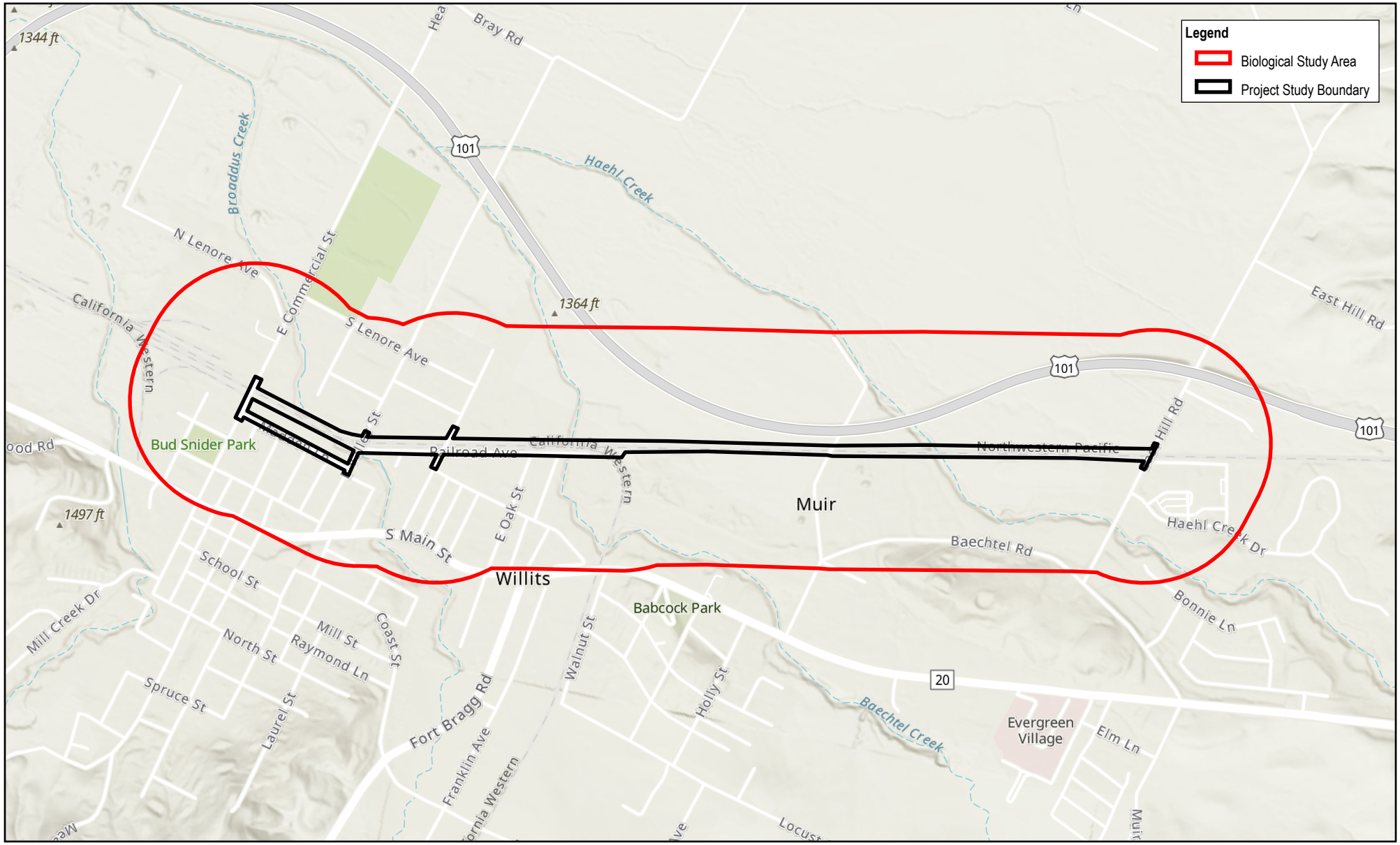
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Study Boundary

FIGURE 2-4

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City of Willits
Willits Rail Trail Project

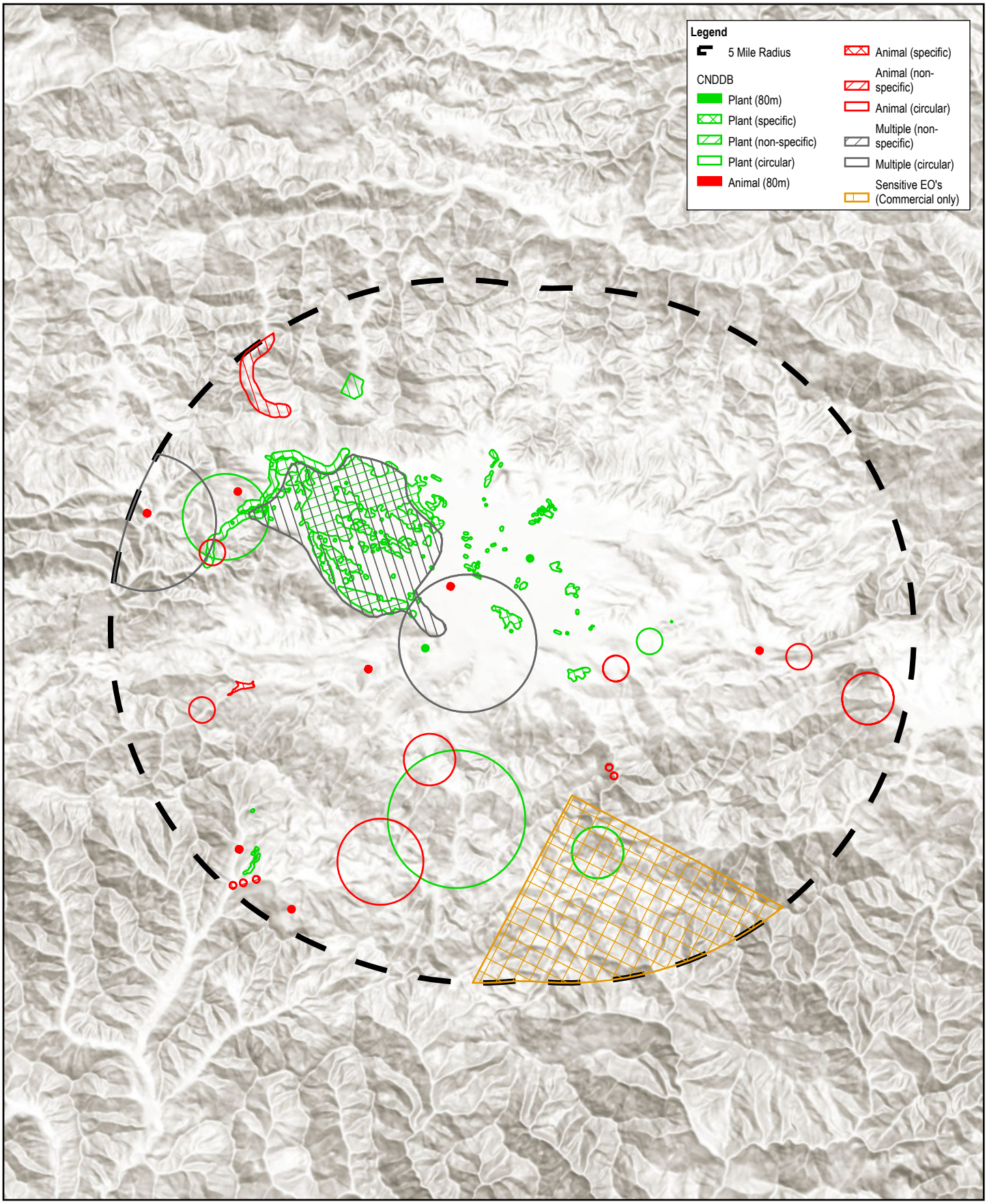
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Biological Study Area

FIGURE 3

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City of Willits
Willits Rail Trail Project

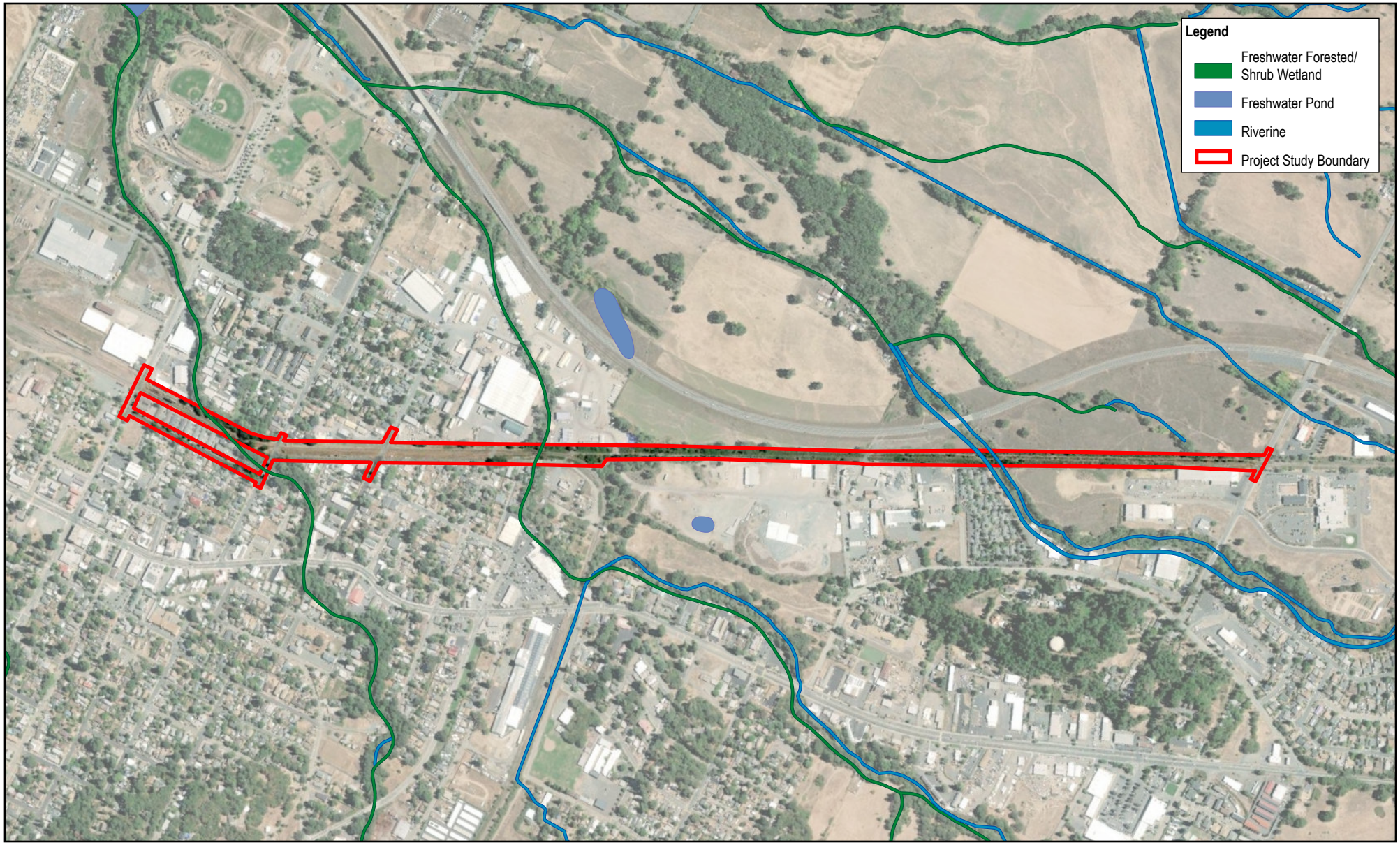
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CNDDB Within 5 Miles

FIGURE 4

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Willits Rail Trail Project

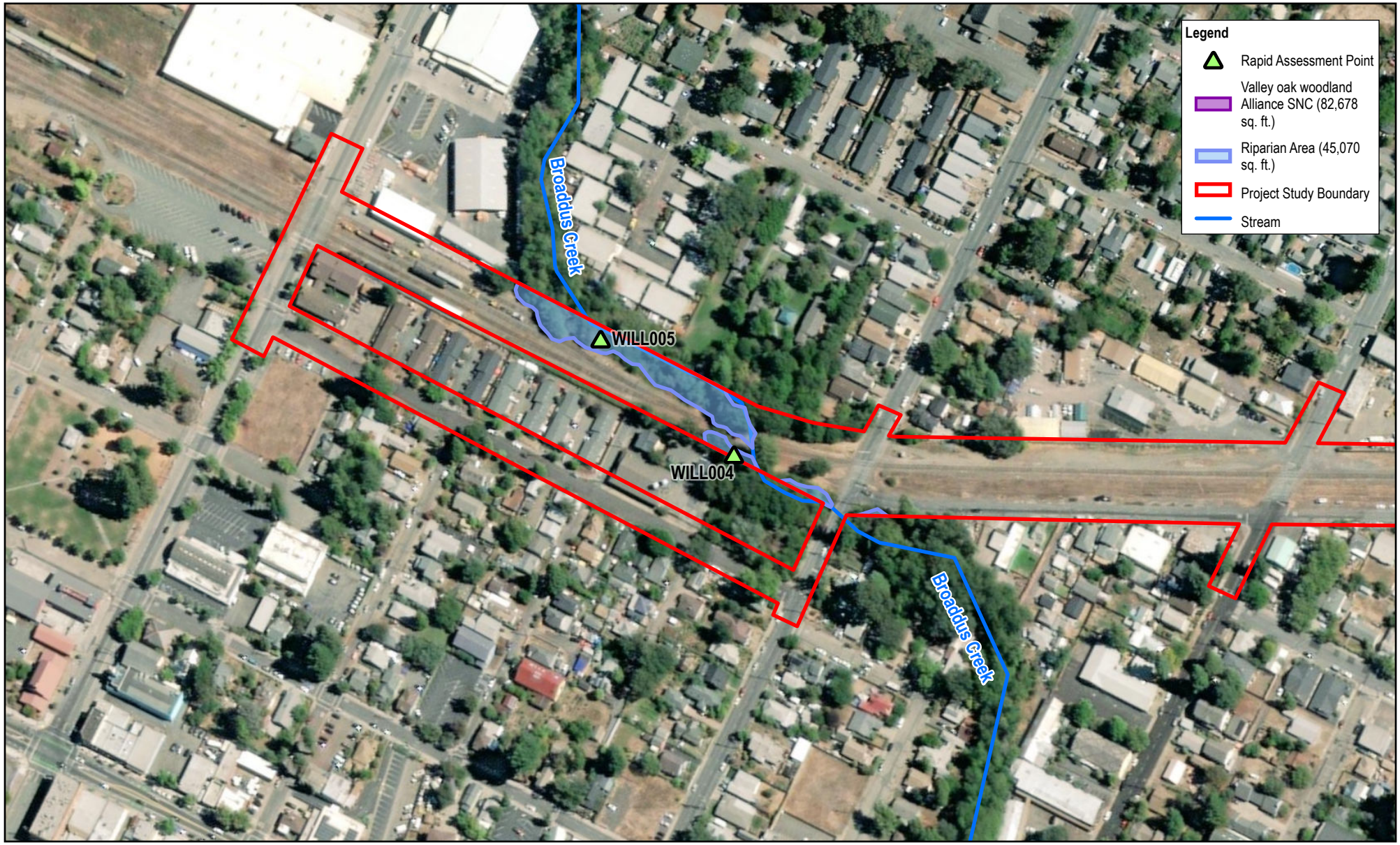
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Revision No. **-**
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FIGURE 5

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City of Willits
Willits Rail Trail Project

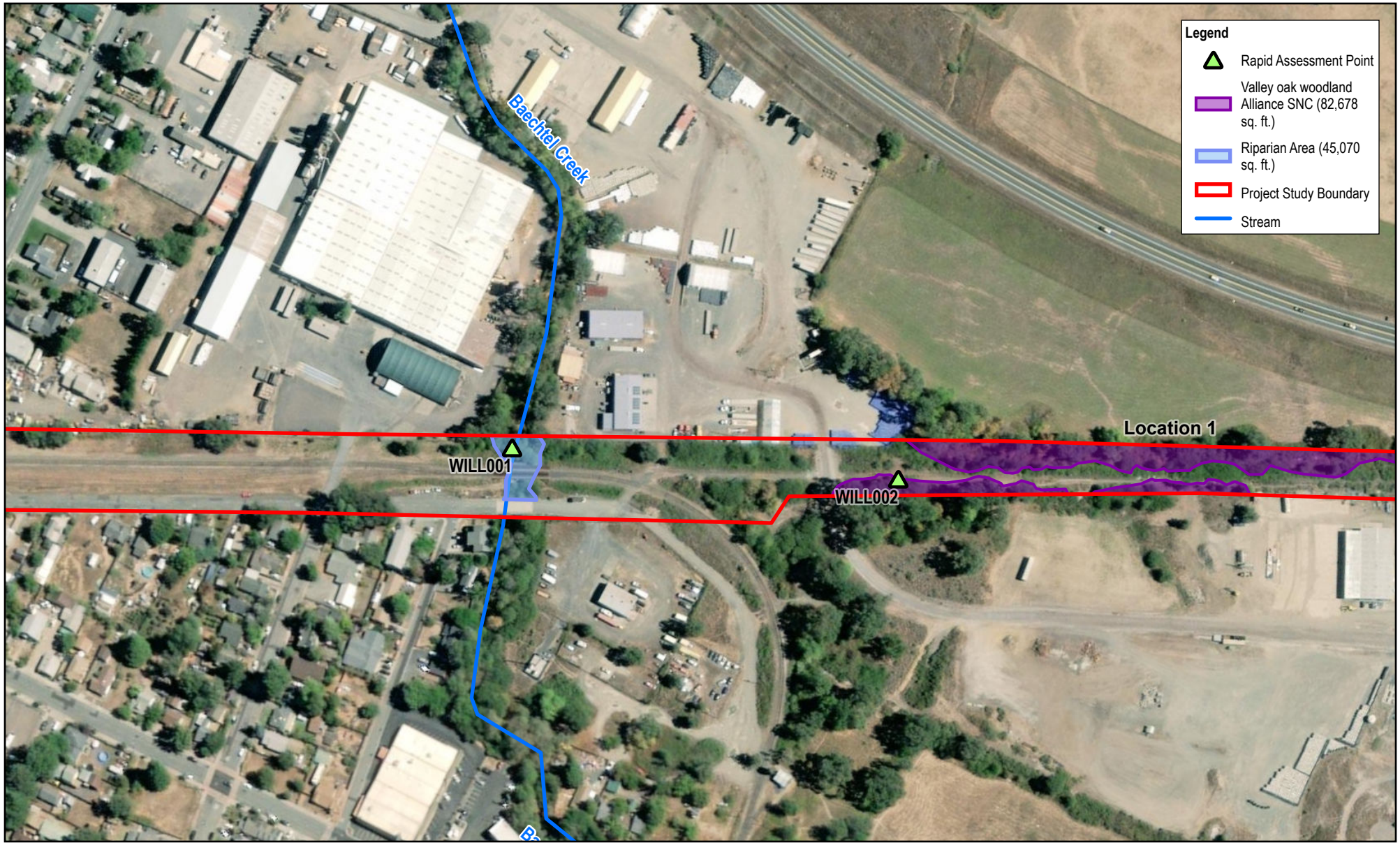
Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Vegetation Map

FIGURE 6-1

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_003_Veg
Print date: 10 Jan 2022 - 11:50

Data source: Road Names: Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA
World Imagery: Maxar. Created by: ethompson3





Paper Size ANSI A

0 75 150 225 300

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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GHD

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Vegetation Map

FIGURE 6-2

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Print date: 10 Jan 2022 - 11:50

Data source: Road Names: Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA
World Imagery: Maxar, Microsoft
World Imagery: Maxar. Created by: ethompson3





Paper Size ANSI A

0 75 150 225 300

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

City of Willits
Willits Rail Trail Project

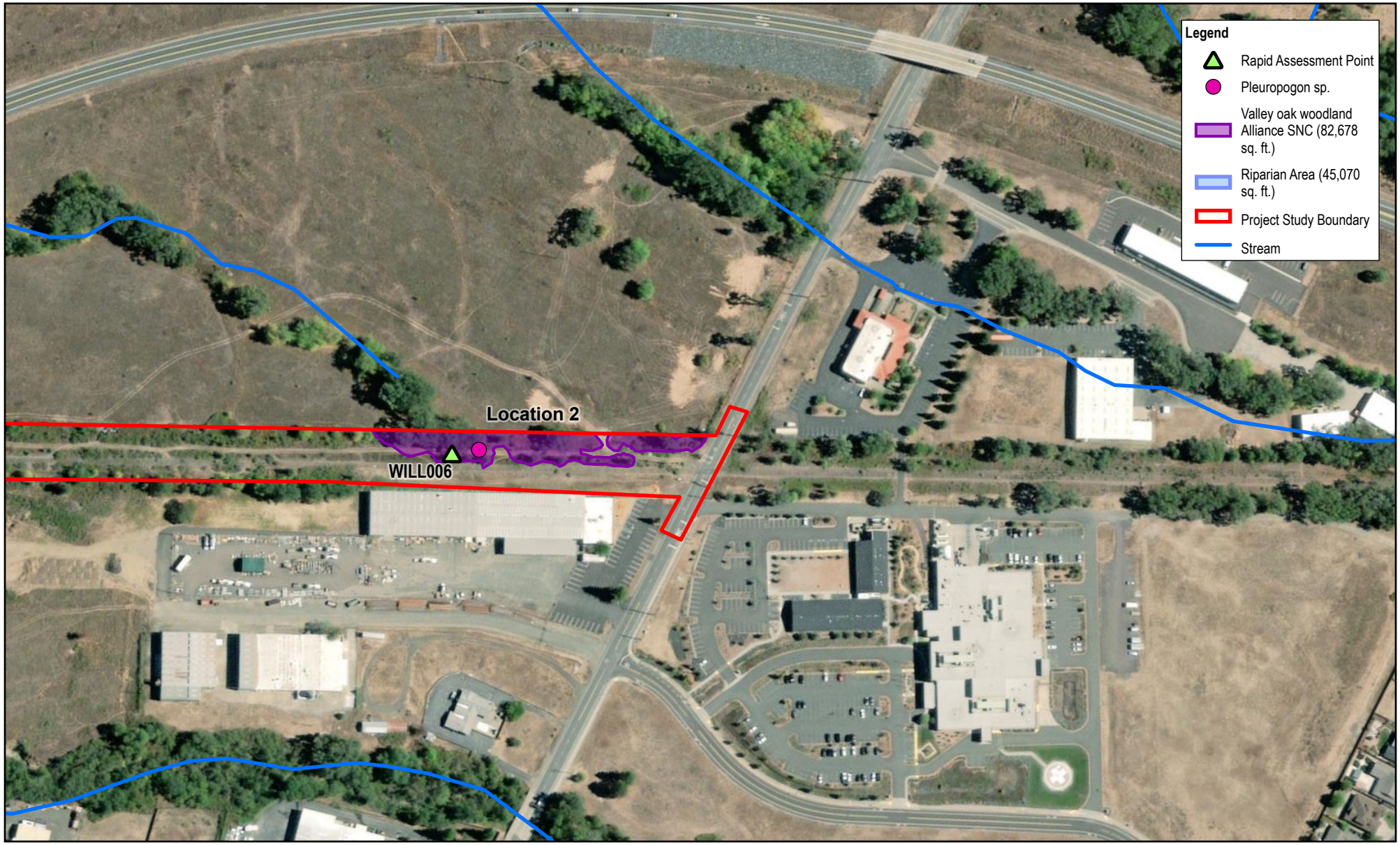
Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Vegetation Map

FIGURE 6-3

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_003_Veg
Print date: 10 Jan 2022 - 11:50

Data source: Road Names: Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA
World Imagery: Earthstar Geographics
World Imagery: Maxar. Created by: ethompson3





Paper Size ANSI A

0 75 150 225 300

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Vegetation Map

FIGURE 6-4

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_003_Veg
Print date: 10 Jan 2022 - 11:50

Data source: Road Names: Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA
World Imagery: Earthstar Geographics
World Imagery: Maxar. Created by: ethompson3

Appendix B

Database Search Results (CNDDB, CNPS, IPaC, NMFS)

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Mendocino County, California



Local office

Arcata Fish And Wildlife Office

(707) 822-7201
(707) 822-8411

1655 Heindon Road
Arcata, CA 95521-4573

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

Pacific Marten, Coastal Distinct Population Segment Martes caurina — Threatened
Wherever found
No critical habitat has been designated for this species.
http://ecos.fws.gov/ecp/species/9081

Point Arena Mountain Beaver Aplodontia rufa nigra — Endangered
Wherever found
No critical habitat has been designated for this species.
http://ecos.fws.gov/ecp/species/7727

Birds

NAME	STATUS

Marbled Murrelet Brachyramphus marmoratus — Threatened
There is **final** critical habitat for this species. Your location overlaps the critical habitat.
http://ecos.fws.gov/ecp/species/4467

Northern Spotted Owl Strix occidentalis caurina — Threatened
Wherever found
There is **final** critical habitat for this species. Your location overlaps the critical habitat.
http://ecos.fws.gov/ecp/species/1123

Western Snowy Plover Charadrius nivosus nivosus — Threatened
There is **final** critical habitat for this species. The location of the critical habitat is not available.
http://ecos.fws.gov/ecp/species/8035

Yellow-billed Cuckoo Coccyzus americanus — Threatened
There is **final** critical habitat for this species. The location of the critical habitat is not available.
http://ecos.fws.gov/ecp/species/3911

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
http://ecos.fws.gov/ecp/species/2891

Fishes

NAME	STATUS

NOT FOR CONSULTATION

Tidewater Goby Eucyclogobius newberryi — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
http://ecos.fws.gov/ecp/species/57

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. http://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Burke's Goldfields Lasthenia burkei Wherever found No critical habitat has been designated for this species. http://ecos.fws.gov/ecp/species/4338	Endangered
Contra Costa Goldfields Lasthenia conjugens Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. http://ecos.fws.gov/ecp/species/7058	Endangered
Monterey Clover Trifolium trichocalyx Wherever found No critical habitat has been designated for this species. http://ecos.fws.gov/ecp/species/4282	Endangered
Showy Indian Clover Trifolium amoenum Wherever found No critical habitat has been designated for this species. http://ecos.fws.gov/ecp/species/6459	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Marbled Murrelet Brachyramphus marmoratus http://ecos.fws.gov/ecp/species/4467#crithab	Final

NOT FOR CONSULTATION

Northern Spotted Owl Strix occidentalis caurina Final
http://ecos.fws.gov/ecp/species/1123#crithab

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES

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NOT LIKELY BREED IN YOUR PROJECT AREA.)

Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/9637

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Sep 30
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
http://ecos.fws.gov/ecp/species/1626

California Spotted Owl Strix occidentalis occidentalis — Breeds Mar 10 to Jun 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/7266

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
http://ecos.fws.gov/ecp/species/2084

Evening Grosbeak Coccothraustes vespertinus — Breeds May 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
http://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/9464

Lesser Yellowlegs Tringa flavipes — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/9679

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Long-eared Owl asio otus — Breeds Mar 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/3631

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
http://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/3914

Rufous Hummingbird selasphorus rufus — Breeds Apr 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/8002

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
http://ecos.fws.gov/ecp/species/3910

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a

level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

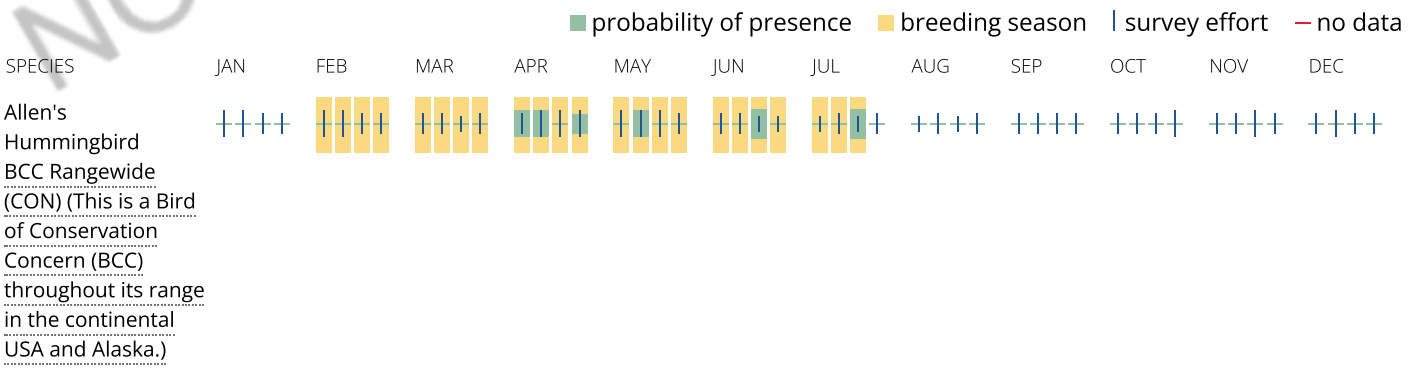
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

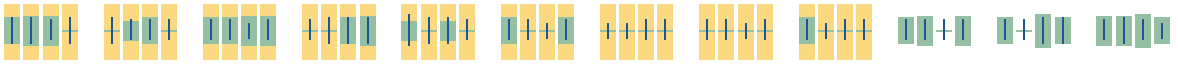
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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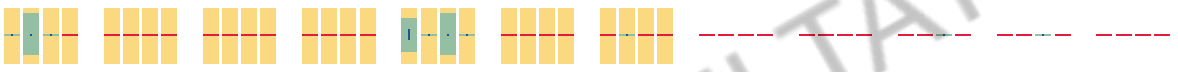
Bald Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



California Spotted Owl
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



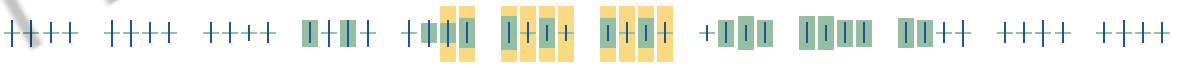
California Thrasher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Clark's Grebe
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



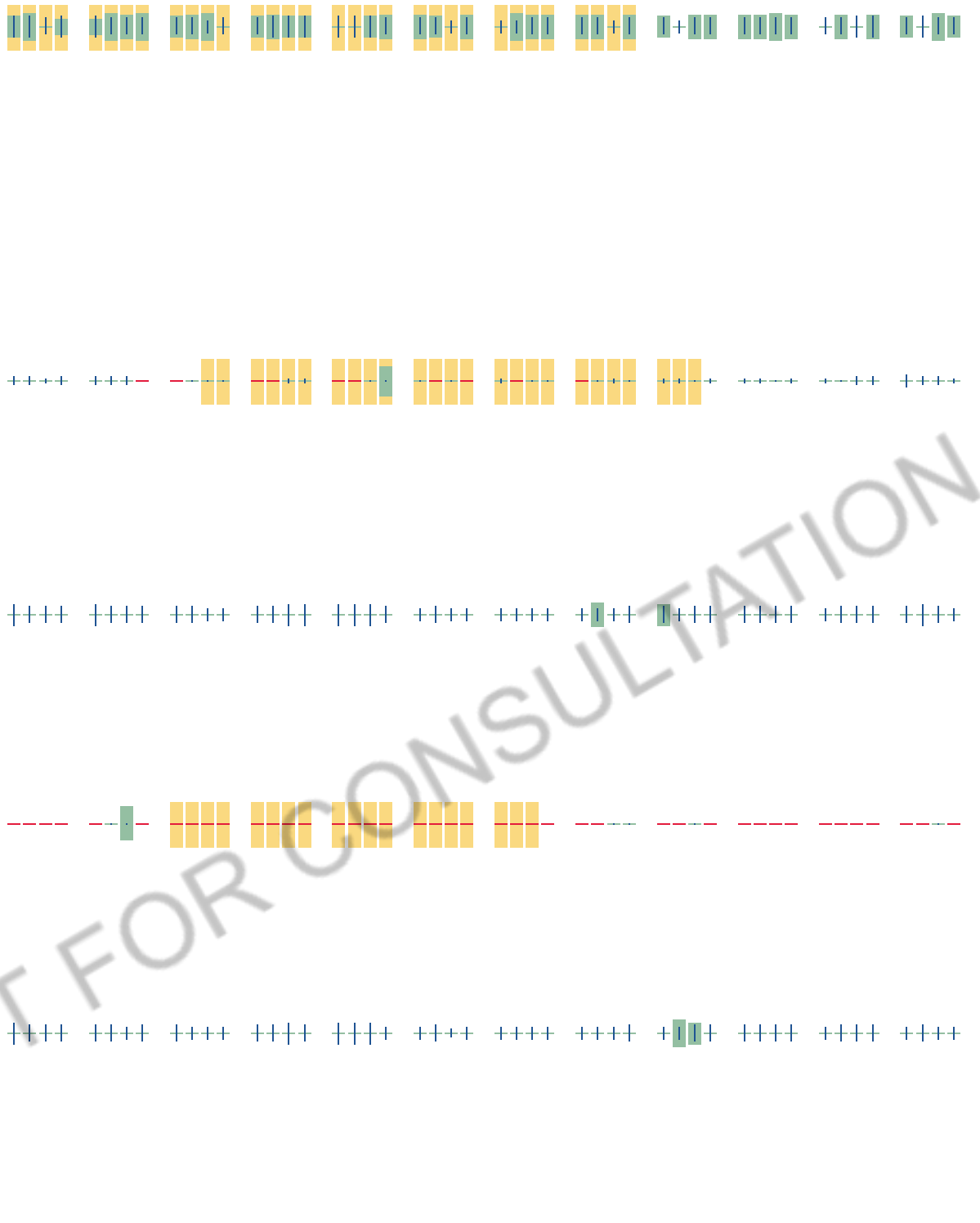
Common Yellowthroat
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



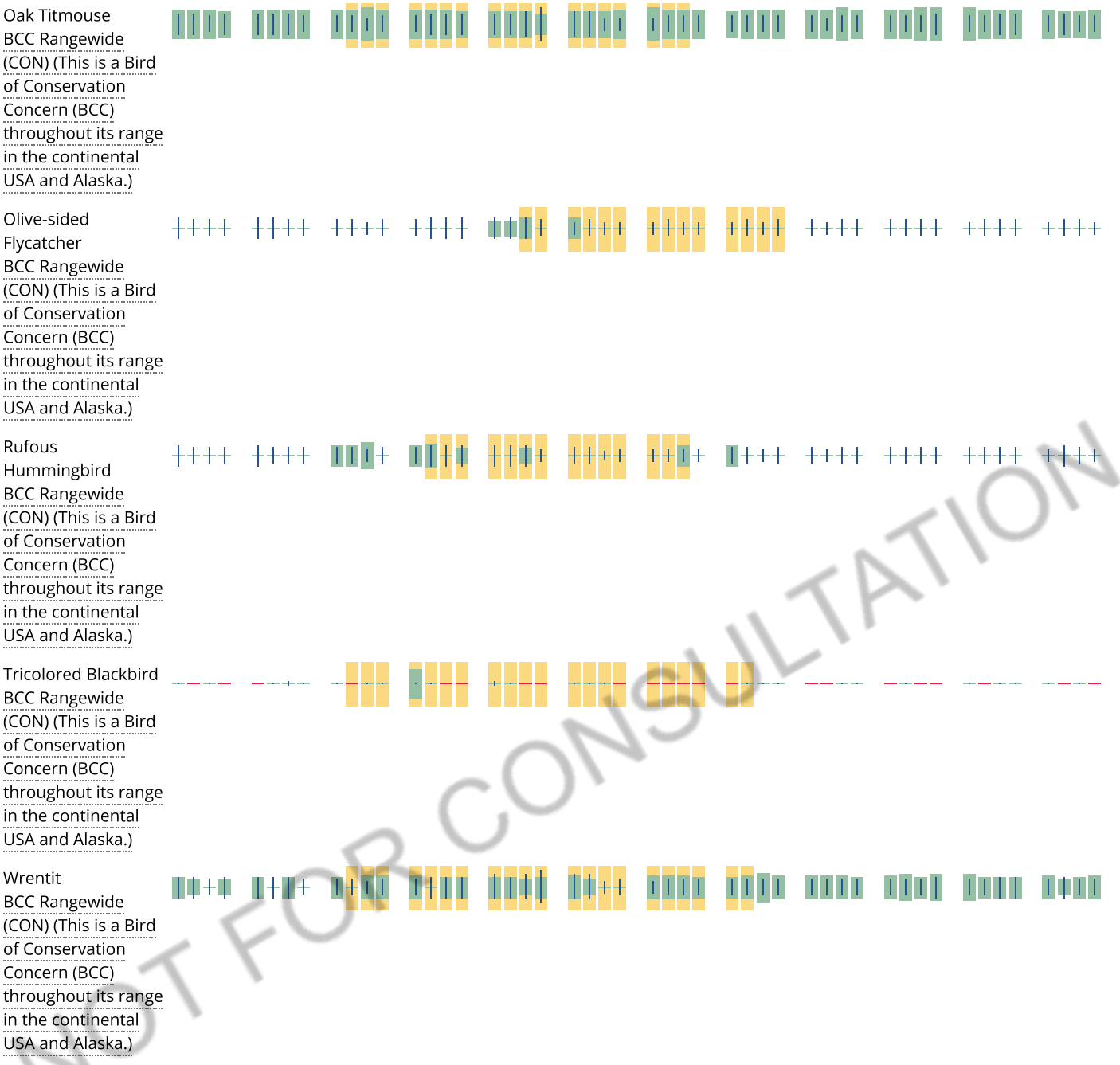
Evening Grosbeak
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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NOT FOR CONSULTATION



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been

identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

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Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

NOT FOR CONSULTATION

The area of this project is too large for IPaC to load all NWI wetlands in the area. The list below may be incomplete. Please contact the local U.S. Fish and Wildlife Service office or visit the NWI map for a full list.

FRESHWATER EMERGENT WETLAND

- PEM1C
- PEM1A
- PEM1K

FRESHWATER FORESTED/SHRUB WETLAND

- PFOA
- PFOC
- PSSA
- PSSC

FRESHWATER POND

- PUBK
- PUBF
- PUBHx

LAKE

- L1UBK

RIVERINE

- R4SBC
- R3USA
- R3USC
- R2UBF

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

NOT FOR CONSULTATION

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Species List - Intersection of USGS Topographic Quadrangles with NOAA Fisheries ESA Listed Species, Critical Habitat, Essential Fish Habitat, and MMPA Species Data

9-quad search area centered around Willits quad

20-Oct-21

November 2016

X = Present on the Quadrangle

		ESA ANADROMOUS FISH (E) = Endangered, (T) = Threatened											**ESA ANADROMOUS FISH CRITICAL HABITAT**										**ESSENTIAL FISH HABITAT**				
		COHO		CHINOOK			STEELHEAD					Eulachon (T)	Southern DPS Green Sturgeon (T)	COHO		CHINOOK			STEELHEAD					Eulachon	Southern DPS Green Sturgeon	SALMON		Groundfish	Coastal Pelagic	Highly Migratory Species
Quad Name	Quad Number	SONCC (T)	CCC (E)	CC (T)	CVSR (T)	SRWR (E)	NC (T)	CCC (T)	SCCC (T)	SC (E)	CCV (T)			SONCC	CCC	CC	CVSR	SRWR	NC	CCC	SCCC	SC	CCV			Coho	Chinook			
Brushy Mountain	39123-E2	X		X			X							X		X			X							X	X			
Burbeck	39123-D4	X	X	X			X							X	X	X			X							X	X			
Foster Mountain	39123-D2	X	X	X			X	X						X	X	X			X							X	X			
Greenough Ridge	39123-C4	X	X	X			X	X						X	X	X			X							X	X			
Laughlin Range	39123-C3	X	X	X			X	X						X	X	X			X	X						X	X			
Longvale	39123-E4	X	X	X			X							X	X	X			X							X	X			
Redwood Valley	39123-C2	X	X	X			X	X						X	X	X				X						X	X			
Willis Ridge	39123-E3	X		X			X							X		X			X							X	X			
Willits	39123-D3	X	X	X			X	X						X	X	X			X							X	X			

CNDDB Rare Find 9-quad database search centered around the Wilits quad, October 18, 2021

SciName	ComName	FedList	CalList	GRank	SRank	RPlantRank	OthrStatus	Habitats	GenHab	MicroHab	ReturnOcc	TaxonGroup
Rana boylii	foothill yellow-legged	None	Endangere	G3	S3		BLM_S-Sensitive | CDFW_SSC-Specie	Aquatic | Chaparral | Cismontar	Partly-shaded, shallow stream	Needs at least some cobble-sized substra	60	Amphibians
Taricha rivularis	red-bellied newt	None	None	G2	S2		CDFW_SSC-Species of Special Conce	Broadleaved upland forest | No	Coastal drainages from Humbo	Lives in terrestrial habitats, juveniles gene	12	Amphibians
Accipiter gentilis	northern goshawk	None	None	G5	S3		BLM_S-Sensitive | CDF_S-Sensitive |	North coast coniferous forest |	Within, and in vicinity of, conif	Usually nests on north slopes, near water	1	Birds
Accipiter striatus	sharp-shinned hawk	None	None	G5	S4		CDFW_WL-Watch List | IUCN_LC-Le	Cismontane woodland | Lower	Ponderosa pine, black oak, rip	North-facing slopes with plucking perches	1	Birds
Icteria virens	yellow-breasted chat	None	None	G5	S3		CDFW_SSC-Species of Special Conce	Riparian forest | Riparian scrub	Summer resident; inhabits ripa	Nests in low, dense riparian, consisting of	1	Birds
Setophaga petechia	yellow warbler	None	None	G5	S3S4		CDFW_SSC-Species of Special Conce	Riparian forest | Riparian scrub	Riparian plant associations in c	Frequently found nesting and foraging in	1	Birds
Bombus caliginosus	obscure bumble bee	None	None	G4?	S1S2		IUCN_VU-Vulnerable		Coastal areas from Santa Barb	Food plant genera include Baccharis, Cirsi	2	Insects
Bombus occidentalis	western bumble bee	None	None	G2G3	S1		USFS_S-Sensitive		Once common and widespread, species has declined precipitously from		2	Insects
Ramalina thrausta	angel's hair lichen	None	None	G5?	S2S3	2B.1		North coast coniferous forest	North coast coniferous forest.	On dead twigs and other lichens. 75-1390	1	Lichens
Arborimus pomo	Sonoma tree vole	None	None	G3	S3		CDFW_SSC-Species of Special Conce	North coast coniferous forest |	North coast fog belt from Ore	Feeds almost exclusively on Douglas-fir n	12	Mammals
Corynorhinus townsendii	Townsend's big-eared	None	None	G4	S2		BLM_S-Sensitive | CDFW_SSC-Specie	Broadleaved upland forest | Ch	Throughout California in a wid	Roosts in the open, hanging from walls ar	2	Mammals
Martes caurina humboldtens	Humboldt marten	Threatened	Endangere	G4G5T1	S1		CDFW_SSC-Species of Special Conce	North coast coniferous forest |	Occurs only in the coastal redv	Associated with late-successional conifer	1	Mammals
Pekania pennanti	Fisher	None	None	G5	S2S3		BLM_S-Sensitive | CDFW_SSC-Specie	North coast coniferous forest |	Intermediate to large-tree stag	Uses cavities, snags, logs and rocky areas	9	Mammals
Taxidea taxus	American badger	None	None	G5	S3		CDFW_SSC-Species of Special Conce	Alkali marsh | Alkali playa | Alpi	Most abundant in drier open s	Needs sufficient food, friable soils and op	1	Mammals
Emys marmorata	western pond turtle	None	None	G3G4	S3		BLM_S-Sensitive | CDFW_SSC-Specie	Aquatic | Artificial flowing wate	A thoroughly aquatic turtle of	Needs basking sites and suitable (sandy b	6	Reptiles
Valley Oak Woodland	Valley Oak Woodland	None	None	G3	S2.1			Cismontane woodland			1	Woodland
Anisocarpus scabridus	scabrid alpine tarplan	None	None	G3	S3	1B.3	USFS_S-Sensitive	Upper montane coniferous fore	Upper montane coniferous for	Open stony ridges, metamorphic scree slo	1	Dicots
Astragalus agnicidus	Humboldt County mil	None	Endangere	G2	S2	1B.1	SB_BerrySB-Berry Seed Bank | SB_C	Broadleaved upland forest | No	Broadleafed upland forest, non	Disturbed openings in partially timbered f	5	Dicots
Blennosperma bakeri	Sonoma sunshine	Endangere	Endangere	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho	Valley & foothill grassland | Ver	Vernal pools, valley and foothi	Vernal pools and swales. 10-290 m.	1	Dicots
Brasenia schreberi	watershield	None	None	G5	S3	2B.3	IUCN_LC-Least Concern	Marsh & swamp | Wetland	Freshwater marshes and swam	Aquatic known from water bodies both n	2	Dicots
Calystegia collina ssp. tridact	three-fingered morni	None	None	G4T1	S1	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodla	Chaparral, cismontane woodla	Rocky, gravelly openings in serpentine. 60	1	Dicots
Cryptantha dissita	serpentine cryptanth	None	None	G3	S3	1B.2	BLM_S-Sensitive	Chaparral | Ultramafic	Chaparral.	Serpentine outcrops. 135-735 m.	1	Dicots
Cryptantha excavata	deep-scarred cryptan	None	None	G1	S1	1B.1	BLM_S-Sensitive	Cismontane woodland	Cismontane woodland.	Sandy, gravelly, dry streambanks. 180-375	1	Dicots
Gilia capitata ssp. pacifica	Pacific gilia	None	None	G5T3	S2	1B.2		Chaparral | Coastal bluff scrub	Coastal bluff scrub, chaparral,	5-1345 m.	1	Dicots
Hesperolinon adenophyllum	glandular western fla	None	None	G2G3	S2S3	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodla	Chaparral, cismontane woodla	Serpentine soils; generally found in seper	6	Dicots
Horkelia tenuiloba	thin-lobed horkelia	None	None	G2	S2	1B.2	SB_CalBG/RSABG-California/Rancho	Broadleaved upland forest | Ch	Broadleafed upland forest, cha	Sandy soils; mesic openings. 45-640 m.	1	Dicots
Limnanthes bakeri	Baker's meadowfoam	None	Rare	G1	S1	1B.1	SB_USDA-US Dept of Agriculture	Freshwater marsh | Marsh & sw	Marshes and swamps, valley a	Seasonally moist or saturated sites within	11	Dicots
Lupinus milo-bakeri	Milo Baker's lupine	None	Threatened	G1Q	S1	1B.1	SB_CalBG/RSABG-California/Rancho	Cismontane woodland | Valley	Cismontane woodland, valley a	In roadside ditches, dry gravelly areas alo	1	Dicots
Navarretia leucocephala ssp.	Baker's navarretia	None	None	G4T2	S2	1B.1		Cismontane woodland | Lower	Cismontane woodland, meado	Vernal pools and swales; adobe or alkalin	8	Dicots
Plagiobothrys lithocaryus	Mayacamas popcornf	None	None	GX	SX	1A		Chaparral | Cismontane woodla	Chaparral, cismontane woodla	Moist sites. 285-415 m.	1	Dicots
Trifolium buckwestiorum	Santa Cruz clover	None	None	G2	S2	1B.1	BLM_S-Sensitive | SB_SBBG-Santa B	Broadleaved upland forest | Cis	Coastal prairie, broadleafed up	Moist grassland. Gravelly margins. 30-805	1	Dicots
Trifolium hydrophilum	saline clover	None	None	G2	S2	1B.2		Marsh & swamp | Valley & foot	Marshes and swamps, valley a	Mesic, alkaline sites. 1-335 m.	1	Dicots
Alisma gramineum	grass alisma	None	None	G5	S3	2B.2		Marsh & swamp | Wetland	Marshes and swamps.	Freshwater marsh. 125-1735 m.	3	Monocots
Fritillaria roderickii	Roderick's fritillary	None	Endangere	G1Q	S1	1B.1	SB_CalBG/RSABG-California/Rancho	Coastal bluff scrub | Coastal pra	Coastal bluff scrub, coastal pra	Grassy slopes, mesas. 20-610 m.	1	Monocots
Piperia candida	white-flowered rein c	None	None	G3	S3	1B.2		Broadleaved upland forest | Lo	North Coast coniferous forest,	Sometimes on serpentine. Forest duff, m	13	Monocots
Pleuropogon hooverianus	North Coast semaphc	None	Threatened	G2	S2	1B.1	SB_BerrySB-Berry Seed Bank | SB_C	Broadleaved upland forest | Me	Broadleafed upland forest, me	Wet grassy, usually shady areas, sometim	7	Monocots
Potamogeton epihydrus	Nuttall's ribbon-leave	None	None	G5	S2S3	2B.2	IUCN_LC-Least Concern	Marsh & swamp | Wetland	Marshes and swamps.	Shallow water, ponds, lakes, streams, irrig	1	Monocots

Hemizonia congesta ssp. calyculata	Mendocino tarplant	Asteraceae	annual her	4.3	G5T4	S4	None	None	Jul-Nov	Cismontane woodlan	225	740	1400	4595	TRUE	CA	LAK, MEN,	Bartlett M	0
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial s	1B.3	G2	S2	None	None	Jan-Mar	Chaparral, Cismontan	135	445	650	2135	TRUE	CA	CCA, MEN	Antioch Sc	17
Delphinium uliginosum	swamp larkspur	Ranunculac	perennial h	4.2	G3	S3	None	None	May-Jun	Chaparral, Valley and	340	1115	610	2000	TRUE	CA	BUT, COL,	Aetna Spri	0
Astragalus agnicidus	Humboldt County milk-vetch	Fabaceae	perennial h	1B.1	G2	S2	CE	None	Apr-Sep	Broadleafe Disturbed	120	395	800	2625	TRUE	CA	HUM, MEI	Bailey Ridg	64
Astragalus rattanii var. rattanii	Rattan's milk-vetch	Fabaceae	perennial h	4.3	G4T4	S4	None	None	Apr-Jul	Chaparral, Cismontan	30	100	825	2705	TRUE	CA	COL, HUM	Arcata No	0
Blennosperma bakeri	Sonoma sunshine	Asteraceae	annual her	1B.1	G1	S1	CE	FE	Mar-May	Valley and foothill gra	10	35	110	360	TRUE	CA	MEN, SON	Cotati (38	24
Hesperolinon adenophyllum	glandular western flax	Linaceae	annual her	1B.2	G2G3	S2S3	None	None	May-Aug	Chaparral, Cismontan	150	490	1315	4315	TRUE	CA	LAK, MEN	Bartlett M	48
Cryptantha excavata	deep-scarred cryptantha	Boraginace	annual her	1B.1	G1	S1	None	None	Apr-May	Cismontane woodlan	100	330	500	1640	TRUE	CA	COL, MEN,	Foster Mtr	5
Cypripedium montanum	mountain lady's-slipper	Orchidacea	perennial r	4.2	G4	S4	None	None	Mar-Aug	Broadleafed upland fo	185	605	2225	7300	FALSE	AK, CA, ID,	AMA, BUT	Carberry (	0
Potamogeton epihydrus	Nuttall's ribbon-leaved pondweed	Potamoget	perennial r	2B.2	G5	S2S3	None	None	(Jun)Jul-Se	Marshes and swamps	369	1210	2172	7125	FALSE	AK, AL, AR	ELD, MAD,	Ackerson I	25
Piperia candida	white-flowered rein orchid	Orchidacea	perennial h	1B.2	G3	S3	None	None	(Mar)May-	Broadleafed upland fo	30	100	1310	4300	FALSE	CA, OR, W	DNT, HUM	Annapolis	222
Erythronium citrinum var. citrinum	lemon-colored fawn lily	Liliaceae	perennial b	4.3	G4T3T4	S3	None	None	Mar-May	Chaparral, Lower mor	150	490	1300	4265	FALSE	CA, OR	DNT, HUM	Burbeck (3	0
Fritillaria purdyi	Purdy's fritillary	Liliaceae	perennial b	4.3	G4	S4	None	None	Mar-Jun	Chaparral, Cismontan	175	575	2255	7400	FALSE	CA, OR	COL, GLE,	Aetna Spri	0
Fritillaria roderickii	Roderick's fritillary	Liliaceae	perennial b	1B.1	G1Q	S1	CE	None	Mar-May	Coastal bluff scrub, Co	15	50	400	1310	TRUE	CA	MEN, SON	Gualala (3	8
Helianthus exilis	serpentine sunflower	Asteraceae	annual her	4.2	G3	S3	None	None	Jun-Nov	Chaparral, Cismontan	150	490	1525	5005	TRUE	CA	COL, GLE,	Aetna Spri	0
Hemizonia congesta ssp. tracyi	Tracy's tarplant	Asteraceae	annual her	4.3	G5T4	S4	None	None	May-Oct	Coastal prairie, Lower	120	395	1200	3935	TRUE	CA	HUM, MEI	Alderpoint	0
Horkelia tenuiloba	thin-lobed horkelia	Rosaceae	perennial h	1B.2	G2	S2	None	None	May-Jul(Au	Broadleafed upland fo	50	165	500	1640	TRUE	CA	MEN, MRI	Annapolis	27
Lilium rubescens	redwood lily	Liliaceae	perennial b	4.2	G3	S3	None	None	Apr-Aug(Se	Broadleafed upland fo	30	100	1910	6265	TRUE	CA	CCA, DNT,	Bailey Ridg	0
Limnanthes bakeri	Baker's meadowfoam	Limnantha	annual her	1B.1	G1	S1	CR	None	Apr-May	Marshes and swamps	175	575	910	2985	TRUE	CA	MEN	Bluenose I	21
Leptosiphon rattanii	Rattan's leptosiphon	Polemonia	annual her	4.3	G4	S4	None	None	May-Jul	Cismontane woodlan	1700	5580	2000	6560	TRUE	CA	COL, GLE,	Brushy Mt	0
Lupinus milo-bakeri	Milo Baker's lupine	Fabaceae	annual her	1B.1	G1Q	S1	CT	None	Jun-Sep	Cismontane woodlan	395	1295	430	1410	TRUE	CA	COL, MEN	Covelo Eas	11
Erythranthe nudata	bare monkeyflower	Phrymacea	annual her	4.3	G4	S4	None	None	May-Jun	Chaparral, Cismontan	200	655	700	2295	TRUE	CA	COL, GLE,	Aetna Spri	0
Pleuropogon californicus var. davyi	Davy's semaphore grass	Poaceae	perennial r	4.3	G5T3	S3	None	None	Mar-Jun	Cismontane woodlan	150	490	610	2000	TRUE	CA	MEN	Covelo Eas	0
Trifolium hydrophilum	saline clover	Fabaceae	annual her	1B.2	G2	S2	None	None	Apr-Jun	Marshes and swamps	0	0	300	985	TRUE	CA	ALA, CCA,	Altamont (	56
Leptosiphon latisectus	broad-lobed leptosiphon	Polemonia	annual her	4.3	G4	S4	None	None	Apr-Jun	Broadleafed upland fo	170	560	1500	4920	TRUE	CA	COL, DNT,	Aetna Spri	0
Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	Apiaceae	perennial h	4.2	G5T3T4	S3S4	None	None	Jun-Oct	Broadleafed upland fo	0	0	610	2000	TRUE	CA	DNT, KRN,	Ano Nuevo	0
Trifolium buckwestiorum	Santa Cruz clover	Fabaceae	annual her	1B.1	G2	S2	None	None	Apr-Oct	Broadleafed upland fo	105	345	610	2000	TRUE	CA	MEN, MNT	Ano Nuevo	64
Pityopus californicus	California pinefoot	Ericaceae	perennial h	4.2	G4G5	S4	None	None	(Mar-Apr)M	Broadleafed upland fo	15	50	2225	7300	FALSE	CA, OR, W	DNT, HUM	Ah Pah Ric	0
Plagiobothrys lithocaryus	Mayacamas popcornflower	Boraginace	annual her	1A	GX	SX	None	None	Apr-May	Chaparral, Cismontan	300	985	450	1475	TRUE	CA	LAK, MEN	Lakeport (	2
Pleuropogon hooverianus	North Coast semaphore grass	Poaceae	perennial r	1B.1	G2	S2	CT	None	Apr-Jun	Broadleafed upland fo	10	35	671	2200	TRUE	CA	HUM, MEI	Bolinas (37	27
Anisocarpus scabridus	scabrid alpine tarplant	Asteraceae	perennial h	1B.3	G3	S3	None	None	Jul-Aug(Se	Upper montane conif	1650	5415	2300	7545	TRUE	CA	COL, HUM	Billys Peak	19
Tracyina rostrata	beaked tracyina	Asteraceae	annual her	1B.2	G2	S2	None	None	May-Jun	Chaparral, Cismontan	90	295	1270	4165	TRUE	CA	HUM, LAK	Alderpoint	15
Wyethia longicaulis	Humboldt County wyethia	Asteraceae	perennial h	4.3	G4	S4	None	None	May-Jul	Broadleafed upland fo	750	2460	1525	5005	TRUE	CA	HUM, MEI	Board Can	0
Cryptantha dissita	serpentine cryptantha	Boraginace	annual her	1B.2	G3	S3	None	None	Apr-Jun	Chaparral	395	1295	580	1905	TRUE	CA	COL, LAK,	Brushy Mt	23
Leptosiphon acicularis	bristly leptosiphon	Polemonia	annual her	4.2	G4?	S4?	None	None	Apr-Jul	Chaparral, Cismontan	55	180	1500	4920	TRUE	CA	ALA, BUT,	Auburn (3	0
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemonia	annual her	4.2	G3G4	S3S4	None	None	Apr-Aug	Cismontane woodlan	5	15	1220	4005	TRUE	CA	ALA, CCA,	Arroyo Gra	0
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemonia	annual her	1B.1	G4T2	S2	None	None	Apr-Jul	Cismontane woodlan	5	15	1740	5710	TRUE	CA	COL, GLE,	Allendale (	64
Alisma gramineum	grass alisma	Alismatace	perennial r	2B.2	G5	S3	None	None	Jun-Aug	Marshes and swamps	390	1280	1800	5905	FALSE	AZ, CA, ID,	LAS, MEN,	Alturas (41	14
Ceanothus gloriosus var. exaltatus	glory brush	Rhamnace	perennial s	4.3	G4T4	S4	None	None	Mar-Jun(Au	Chaparral	30	100	610	2000	TRUE	CA	HUM, MEI	Bear Harb	0
Gilia capitata ssp. pacifica	Pacific gilia	Polemonia	annual her	1B.2	G5T3	S2	None	None	Apr-Aug	Chaparral, Coastal blu	5	15	1665	5465	FALSE	CA, OR	DNT, HUM	Albion (39	92
Bruchia bolanderi	Bolander's bruchia	Bruchiance	moss	4.2	G3G4	S3	None	None		Lower montane conif	1700	5580	2800	9185	FALSE	CA, NV, OI	ELD, FRE, I	Mt. Rose	28
Hosackia gracilis	harlequin lotus	Fabaceae	perennial r	4.2	G3G4	S3	None	None	Mar-Jul	Broadleafed upland fo	0	0	700	2295	FALSE	CA, OR, W	DNT, HUM	Albion (39	0
Calystegia collina ssp. tridactylosa	three-fingered morning-glory	Convolvula	perennial r	1B.2	G4T1	S1	None	None	Apr-Jun	Chaparral, Gravelly, C	0	0	600	1970	TRUE	CA	COL, LAK,	Brushy Mt	11
Brasenia schreberi	watershield	Cabombac	perennial r	2B.3	G5	S3	None	None	Jun-Sep	Marshes and swamps	0	0	2200	7220	FALSE	AK, AL, AR	BUT, CAL,	Annapolis	43
Ramalina thrausta	angel's hair lichen	Ramalinace	fruticose li	2B.1	G5?	S2S3	None	None		North Coast coniferou	75	245	430	1410	FALSE	AK, CA, ID,	DNT, HUM	Cant Hook	21
Usnea longissima	Methuselah's beard lichen	Parmeliace	fruticose li	4.2	G4	S4	None	None		Broadleafed upland fo	50	165	1460	4790	FALSE	AK, CA, MI	DNT, HUM	Ah Pah Ric	206

Appendix C

Site Visit Photographs

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Photo 1. Potential North Coast semaphore grass (CT, CNPS 1B.1) within the PSB along the railway easement during the April 19-20th, 2021 survey.



Photo 2. The semaphore grass in flower during April, with erect to ascending spikelets during the April 19-20th, 2021survey.



Photo 3. The habitat where the semaphore grass was observed, with ponding water and saturated soil present during the April 19-20th, 2021survey.



Photo 4. Semaphore grass habitat in informal use trail along the rail during the April 19-20th, 2021survey.



Photo 5. Semaphore grass rhizome used for identification in the July 6-8th, 2021 survey.



Photo 6. Semaphore grass within the PSB was observed to never reach the height typical of North Coast semaphore grass during the July 6-8th, 2021 survey but may have been trampled or stunted in the lower quality habitat.

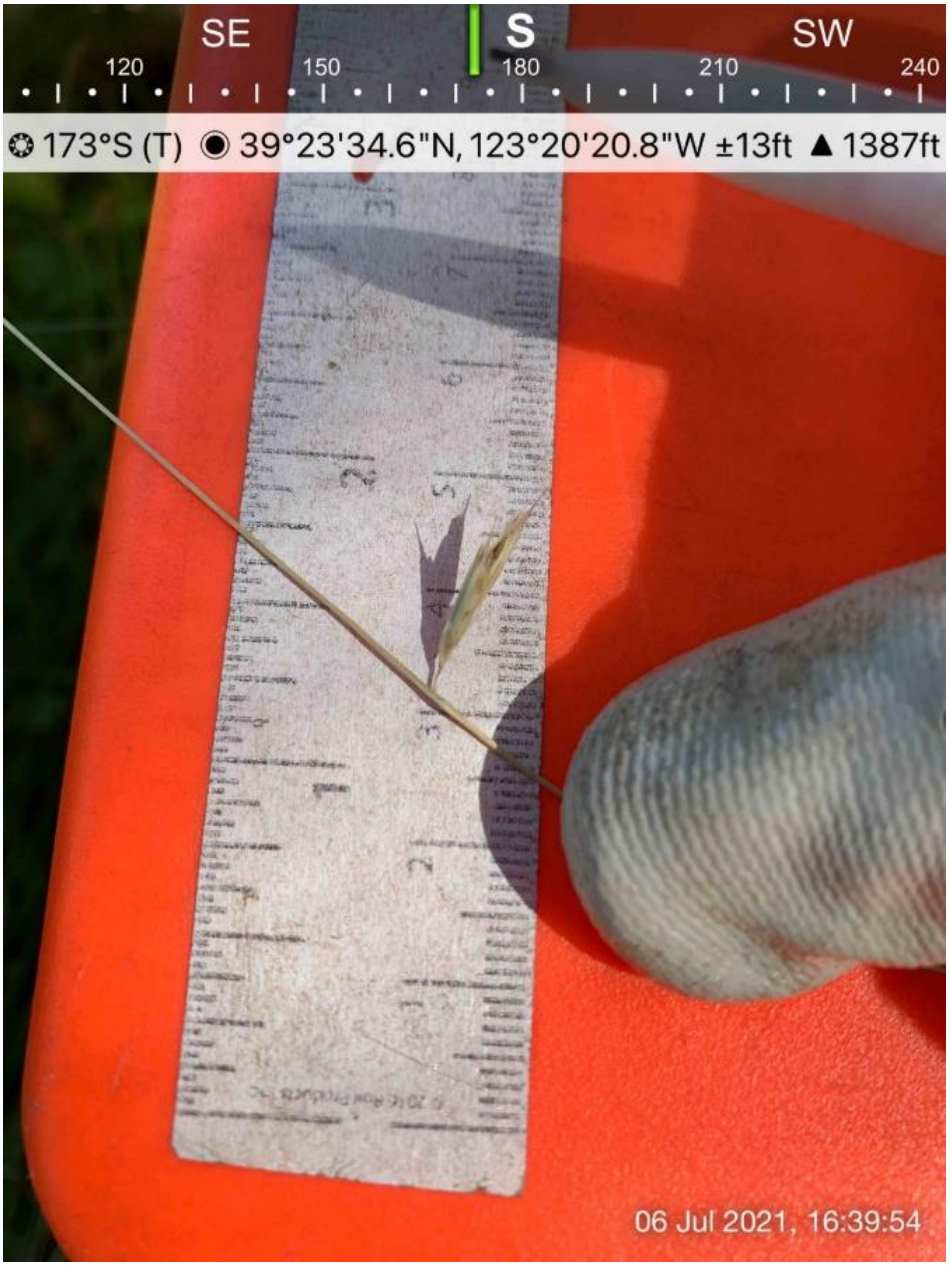


Photo 7. Semaphore grass floret used for identification in the July 6-8th, 2021 survey.



Photo 8. SNC Location 1, Valley oak woodland Association along both sides of the rail within the PSB during the April 19-20th, 2021 survey.



Photo 9. SNC Location 2, closed canopy across the rail footprint, within the riparian zone. On the northern end of the vegetation community within the PSB during the July 6-8th, 2021 survey. Semaphore grass was also found in this location (**Appendix A, Figure 6-4**).



Photo 10. An example of some quality habitat in Broaddus Creek, east of the bridge crossing within the PSB.

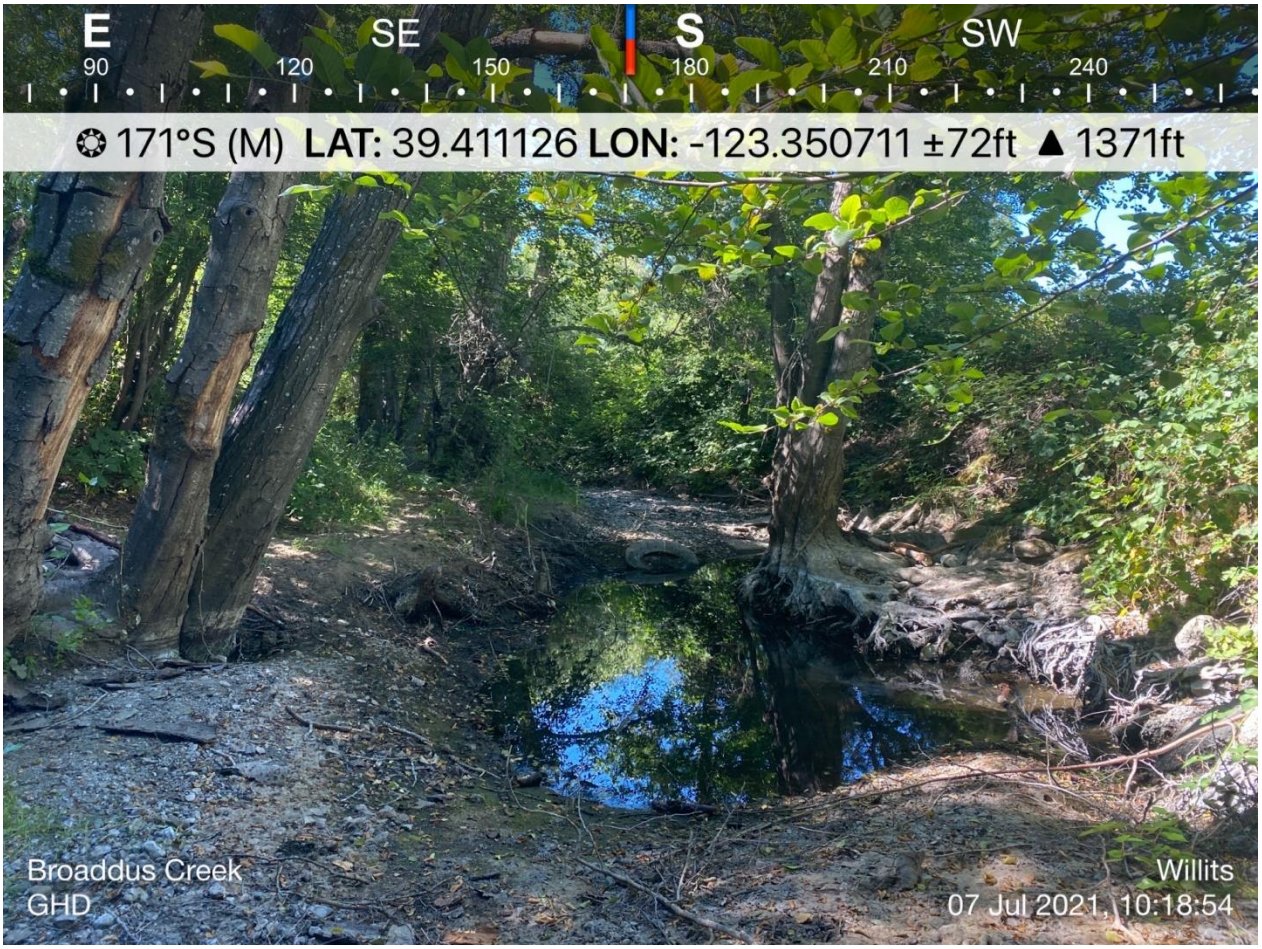


Photo 11. An example of some quality habitat in Broaddus Creek, east of the bridge crossing within the PSB.



Photo 12. Part of the riparian zone of Baechtel Creek within the PSB.



Photo 13. Haehl Creek and it’s red alder riparian zone within the PSB.

Appendix D

List of Wildlife Species Detected On-site

Wildlife Species Detected On-site

Common Name	Scientific Name	Common or Special Status
Birds		
Northern Flicker	*Colaptes auratus*	Common
Red-shouldered Hawk	*Buteo lineatus*	Common
Red-tailed Hawk	*Buteo jamaicensis*	Common
Turkey Vulture	*Cathartes aura*	Common
Common Raven	*Corvus corax*	Common
Woodpecker (uncertain of whether Acorn, Nuttall's, Ladder-back or Hairy species)		Common
American Robin	*Turdus migratorius*	Common
Chestnut-backed Chickadee	*Poecile rufescens*	Common
Golden Crowned Sparrow	*Zonotrichia atricapilla*	Common
California Towhee	*Melozone crissalis*	Common
Mammals		
Deer sp.	*Odocoileus sp.*	Common
Domestic cat	*Felis catus*	Common
Fish		
Steelhead/Rainbow Trout (young of year)	*Oncorhynchus mykiss,* possibly subspecies *irideus*	If Steelhead: FT, if Rainbow Trout: Common (see Table 6.3)
Reptiles		
Western Fence Lizard	*Sceloporus occidentalis*	Common
Insects		
Swallowtail butterfly	*Papilionidae sp.*	Common

Appendix C

Aquatic Resources Delineation

Aquatic Resources Delineation Report

Willits Rail with Trail

City of Willits

October 14, 2021



Aquatic Resources Delineation Report
Willits Rail with Trail

This document has been prepared for:

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October 14, 2021

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1. Summary

GHD prepared this aquatic resource delineation report and accompanying appendices on behalf of the City of Willits (City), in support of the proposed Willits Rail with Trail (Project) within the community of Willits, California (**Appendix A Figure 1**). GHD conducted the aquatic resource delineation fieldwork on July 6th – 8th, 2021. The delineation was conducted within the Project Study Boundary (PSB) as shown in **Appendix A, Figure 2**. United States Army Corps of Engineers (USACE) three-parameter wetlands, and other waters of the United States or State of California (Other Waters) were mapped based on wetland indicative vegetation, hydric soils, and wetland hydrology and observation of the ordinary high-water mark (OHWM). Both three-parameter wetlands and other waters were mapped as shown in **Appendix A, Figures 3-1, 3-2, 3-3, and 3-4**. No one-parameter wetlands were mapped because the Project is located outside of the Coastal Zone.

The aquatic resource delineation identified eight three-parameter wetlands with hydric soil, hydrophytic vegetation, and hydrology indicators, and three seasonal watercourses. The three-parameter wetlands were observed running adjacent to the rail line on either side. The total area of three-parameter wetlands mapped within the PSB is 118,994 ft^2 (2.7 acres) and the total area of Other Waters mapped within the PSB is 13,861 ft^2 (0.32 acres) (**Appendix A, Figures 3-1, 3-2, 3-3, and 3-4**). The three seasonal watercourses that were observed running across the PSB, Broaddus Creek, Baechtel Creek, and Haehl Creek, were delineated using OHWM indicators in the field, and can be considered Other Waters of the United States or State of California (Other Waters). These creeks drain into Davis Creek, which drains to Outlet Creek, a tributary of the Eel River (a navigable waterway). Of the eight three-parameter wetlands, seven are directly hydrologically connected to a seasonal watercourse, and one is likely historically connected; all are likely USACE and Regional Water Quality Control Board (RWQCB) jurisdictional. The total area of three-parameter wetlands and Other Waters encompasses 132,855 ft^2 or 3.05 acres, or 12% of the PSB.

2. Introduction

This report supports the Project's environmental documentation, permitting, and construction planning as deemed appropriate. The proposed PSB includes the proposed area of impact which encompasses 25.8 acres (**Appendix A Figure 2**). This report is subject to, and must be read in conjunction with, the limitations set out in Section 5, Special Terms and Conditions, and the assumptions and qualifications contained throughout the report.

2.1 Project Description

The Project would construct an approximately 1.6-mile Class I bike trail (pedestrian and bicycle trail) from East Commercial Street to East Hill Road within the North Coast Railroad Authority (NCRA) right of way, within the City limits. Installation of this 1.6-mile trail would improve access and safety for pedestrian and bicycle users as well as create opportunities for nature study and recreation. The trail would provide a connection between the southern and the northern parts of the City, and it would be accessible to the residents that live and work in Willits. Furthermore, the trail would eventually provide linkages beyond the City into other parts of Mendocino County, the City of Ukiah, and beyond as part of the proposed Great Redwood Trail, which is planned to span between Eureka and the north San Francisco Bay Area. The

proposed trail would also connect to the Haehl Creek Trail, located near the Frank R. Howard Memorial Hospital.

The trail would be a paved pathway Class I facility, an approximately ten-feet wide trail (five feet per travel lane) with two-foot shoulders. The trail may be narrowed in limited locations where unavoidable site constraints exist. The trail would be separated from the railroad and adjacent private property by a fence. The trail would be a minimum of ten feet from the railroad to meet NCRA design standards. The trail would include new bridge crossings over three creeks – Broaddus Creek, Baechtel Creek, and Haehl Creek.

It is assumed the railroad will remain active, with minimal levels of activity primarily associated with the Skunk Train excursion tours. The Project would not conflict with the Skunk Train excursion trails or other railroad use. Small areas of inactive track may be removed, primarily associated with grade crossings or inactive spurs. Existing street crossings may be enhanced with *California Manual on Uniform Traffic Control Devices* (CA MUTCD) standards, such as with LED signs. Signage and markings at public street crossings would be updated as required by the California Public Utilities Commission (CPUC). Railroad crossings within City-street crossings would remain unaltered, except when providing connections to existing pedestrian facilities (including curb, gutter and sidewalk) located adjacent to the trail.

The Project would be designed in accordance with NCRA design standards and the Caltrans *Highway Design Manual, 7th Edition* (2020). In addition, the Project would be designed in accordance with other specific applicable standards, including the 2010 Americans with Disabilities Act Standards for Accessible Design and CA MUTCD standards.

2.2 Project Location

The Project is located along the railroad corridor between East Commercial Street to East Hill Road within the NCRA right of way (**Appendix A, Figure 1**). The Skunk Train Depot is located at the northern end of the trail alignment. The railroad corridor is bordered by residential, industrial, and open space uses (**Appendix A, Figure 2, Figures 2A through Figure 2D**). Three creeks (including riparian habitat) cross the trail alignment. Portions of the Project Area are included in the mapped FEMA Regulatory Floodway and/or the 100-year flood zone of the three creeks which cross the trail alignment (**Appendix A, Figure 6**).

2.3 Regulatory Background

2.3.1 Federal

Waters of the United States

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

The term waters of the United States are defined as:

> *(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
>
> *(2) All interstate waters including interstate wetlands;*
>
> *(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:*

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(iii) Which are used or could be used for industrial purposes by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under this definition;

(5) Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;

(6) The territorial sea;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States. (40 CFR § 230.3).

Wetlands Definition

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

Wetland Delineation Manual

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

Federal Geographic Data Committee (FGDC) Wetland Classification Standard

The Classification of Wetlands and Deepwater Habitats of the United States (FGDC, 2013) provides a nationally standardized hierarchical system for classifying wetland and deepwater habitats based on Cowardin et al. (1979). The National Wetland Inventory (NWI), a publicly available resource that provides information on the distribution of wetlands in the U.S., classifies wetlands according to the FDGC standard. The FDGC classification is based on a definition of wetlands with at least one of the three wetland attributes: predominantly hydrophytic vegetation, predominantly hydric soil, and hydrology. However, they state that all available information should be used, and all three attributes should be considered if they are present (FGDC, 2013).

2.3.2 State

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

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The Water Code defines "waters of the state" broadly to include "any surface water or groundwater, including saline waters, within the boundaries of the state." "Waters of the state" includes all "waters of the U.S." The following wetlands are waters of the state:

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

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not waters of the state. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state" (SWRCB, 2019).

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

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

The RWQCB carry out and regionally regulate the SWRCB's definition of Waters of the State.

3. Methodology

3.1 Aquatic Resources Delineation Approach

GHD scientists conducted the aquatic resource delineation on July 6th – 8th, 2021. At the time of the delineation, 23.6 acres of the PSB were surveyed. On January 10th, 2022, 2.2 acres were added to the Project Boundary, but all additions are within the footprint of existing developed streets and contain no aquatic resources. These 2.2 acres are included in the PSB calculations.

To define a wetland, the USACE requires that vegetation, soil, and hydrology (three-parameters) all show wetland attributes (USACE 1987; USACE 2010). The wetland delineation used USACE criteria from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0)* (USACE 2010). The current standard field forms provided by the USACE (2010) were used to collect vegetation, soils, and hydrology data (**Appendix B**).

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

Three-parameter wetland/upland boundaries and plots were mapped in the field with an Eos Arrow 100 Submeter Global Positioning System (GPS) Receiver with Global Navigation Satellite System (GNSS) and

an iPad running ArcGIS Collector software. The wetland/upland boundary was recorded with the GPS unit as needed to map the wetland's spatial extent. The points were then connected in the office using ArcMap software for figure creation and the boundaries were clipped to the extent of the PSB.

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

3.2 Botanical Methodology

Vegetation data collection consisted of listing the dominant species in the herbaceous, shrub, and tree layer within a standard-sized plot determined by the strata layer. Nomenclature follows *The Jepson Manual* (Baldwin et al. 2012), which was cross-checked to federal standard nomenclature to identify the indicator status. The species' wetland indicator status for the Western Mountains, Valleys, and Coast Region was denoted in the respective column, using the standard reference: *State of California 2016 Wetland Plant List* (Lichvar et al. 2018). This list classifies species based on the probability that they are found in wetlands (USACE 1987) as follows:

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

Species that do not appear on the list are considered to be in the upland category (Lichvar et al. 2018). Standard procedures for documenting hydrophytic vegetation indicators were used per the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (USACE 2010). A complete list of plants documented at the site with respective wetland indicator status is included as **Appendix C**. Site photographs have been included as **Appendix D**. A separate Botanical Memo contains the locations and extents of mapped vegetation alliances and Sensitive Natural Communities within the PSB (GHD 2021).

3.3 Soils Methodology

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

The *Munsell Soil Color Book* (COLOR, M. 2000) was used to describe the soil colors for the entire depth of the test pit. Moist, natural soil aggregate (ped) surfaces, which had not been crushed, were used to

determine the soil's color. Soils with low chroma were verified as being hydric or upland with *Field Indicators of Hydric Soils in the United States* (Version 8.2, 2018).

3.3.1 Existing Soils Information

The NRCS identifies four soil units within the PSB (**Appendix A, Figure 5; and Appendix E**). A brief map unit description, as generated by the NRCS, is provided for each soil unit below (NRCS 2021). Although NRCS soil mapping is informative, the scale is generally too broad to definitively characterize potential wetlands. Please see the full report included as **Appendix E** for complete details.

Cole silty clay loam, 0 to 1 percent slopes

The Cole silty clay loam 0 to 1 percent slopes map unit composition contains: 85% Cole and similar soils, and 15% minor components (consisting of 5% Cole, 5% Unnamed and 5% Clear Lake). Cole soils can be found on alluvial fans and toe slopes; the parent material is alluvium derived from sedimentary rock. Cole consists of silty clay loam in the top horizons, with clay loam followed by loam at the deepest horizon. Cole soils would be considered prime farmland if irrigated and drained and has a land capability classification (LCC) of 2w if irrigated, and 3w if not irrigated. These soils are somewhat poorly drained, and the depth to water table is 12 to 48 inches. Cole silty clay loam is not considered a hydric soil. This soil type is centrally located and comprises 22.7% of the PSB.

Feliz loam, 0 to 2 percent slopes

The Feliz loam 0 to 2 percent slopes map unit composition contains: 85% Feliz and similar soils, and 14% minor components (consisting of 3% Cole, 3% Unnamed, 3% Pinnobie, 2% Pinole, 1% Talmage, 1% Russian loam, and 1% Xerofluvents). Feliz soils can be found on alluvial fans and backslopes; the parent material is alluvium derived from sedimentary rock. Feliz consists of loam in all horizons. Feliz soils would be considered prime farmland if irrigated and has an LLC of 1 if irrigated, and 3c if not irrigated. These soils are well drained, and the depth to water table is more than 80 inches. Feliz loam is not a considered a hydric soil. This soil type is in the northern portion of the Project and comprises 0.7% of the PSB.

Gielow sandy loam, 0 to 5 percent slopes

The Gielow sandy loam 0 to 5 percent slopes map unit composition contains: 85% Gielow and similar soils, and 15% minor components (consisting of 3% Cole, 3% Clearlake, 3% Feliz, 2% Unnamed, 2% Russian, and 2% Talmage). Gielow soils can be found on alluvial flats and backslopes; the parent material is alluvium derived from sedimentary rock. Gielow consists of sandy loam in the top horizon, with loam followed by stratified sandy loam to sandy clay loam at the deepest horizon. Gielow soils would be considered prime farmland if irrigated and drained and has an LLC of 2w if irrigated, and 3w if not irrigated. These soils are somewhat poorly drained, and the depth to water table is 0 inches. Gielow loam is considered a hydric soil. This soil type is in the southern portion of the Project and comprises 28.8% of the PSB.

Urban land

The Urban land map unit composition contains: 90% Urban land, and 10% minor components (consisting of 2% Unnamed, 2% Xerofluvents, 1% Talmage, 1% Cole, 1% Feliz, and 1% Pinole). Urban land is not prime farmland. Urban land is not a hydric soil. This soil type is in the northern portion of the Project and comprises 47.8% of the PSB.

3.4 Hydrology Methodology

GHD delineated wetlands and Other Waters within the PSB during July 6th – 8th, 2021, in the middle of the dry season. A WETS table showing climate data for the Ukiah Municipal Airport, CA, Station is provided in **Appendix F** (NOAA 2021). Aerial photography and the National Wetland Inventory Mapper were referenced before conducting fieldwork (**Appendix A, Figure 5**) (NWI 2021). The FEMA flood hazard map is also included in **Appendix A, Figure 6** (FEMA 2021). Wetland hydrology indicators, such as drainage patterns, material deposits, soil saturation, high water table, or surface water presence, were recorded in the field.

4. Results

Weather conditions during field visit were clear and sunny (zero inches of precipitation recorded within the previous month). The PSB contains eight, three-parameter wetlands that are likely USACE and RWQCB jurisdictional and three seasonal watercourses that are likely jurisdictional Other Waters. Upland sampling points were also described within areas of planned disturbance to confirm and document the absence of wetland indicators in these areas. **Appendix A, Figure 3** shows the results of the three-parameter wetland delineation, and Other Waters determination based upon OHWM. Summaries and potential jurisdictional status of each wetland or Other Water is presented in Table 3-1 below.

4.1 Wetlands

All three-parameter wetlands were observed on either side of the railroad as seasonal ditches, occasionally crossing underneath the railroad through a culvert. Summaries of each three-parameter wetland are provided below, and square footage is provided in Table 3-1. Please see the USACE Data Forms in **Appendix B** for more details.

4.1.1 Wetland 1

Wetland 1 was identified north of Baechtel Creek (Watercourse 2) in the northcentral portion of the PSB. Wetland 1 consists of a vegetated three-parameter wetland ditch that was observed as hydrologically connected to Baechtel Creek and extends for approximately 450 feet along the east side of the railroad. Wetland 1 was mapped to 2,162 ft^2 (0.05 acres). See **Appendix A, Figure 3-2** for the associated map.

Wetland 1 was open and mostly free of rooted woody vegetation and is classified according to the Cowardin system as a Palustrine Emergent wetland (PEM) (FGDC 2013). The vegetation was primarily characterized by pennyroyal (*Mentha pulegium*, OBL), and reed fescue (*Festuca arundinacea,* FAC), with smaller amounts of foothill sedge (*Carex tumulicola*, FACU), giant horsetail (*Equisetum telmateia*, FACW), tall-flatsedge (*Cyperus eragrostis*, FACW), and common velvetgrass (*Holcus lanatus*, FAC). Wetland 1 passed the dominance test for hydrophytic vegetation.

Soil in Wetland 1 consisted of a 10YR 3/2 loam upper horizon (0-5 inches) with 1% of 7.5YR 3/4 redoximorphic features and a 10YR 3/2 loam lower horizon (5-14 inches) with distinct 10% of 7.5YR 3/4 redoximorphic features. The hydric soil indicator is Redox Dark Surface (F6). Wetland 1 was dry but appeared to seasonally pond and drains to Baechtel Creek. Primary indicators of wetland hydrology were surface soil cracks (B6) and a sparsely vegetated concave surface (B8), and secondary indicators of wetland hydrology included geomorphic position (D2) and passing the vegetation FAC-neutral test (D5). Wetland 1 is hydrologically connected to a navigable waterway and is therefore assumed to be under USACE and

RWQCB jurisdiction (**Table 3-1**). Please see attached data forms for sample points W1T1-W and W1T1-U in **Appendix B and Table 3-2** for additional details.

4.1.2 Wetland 2

Wetland 2 was identified south of Baechtel Creek in the northcentral portion of the PSB. Wetland 2 consists of a vegetated three-parameter wetland ditch that was observed as hydrologically connected to Baechtel Creek and extends for approximately 1,200 feet along the west side of the railroad. The southern portion of Wetland 2 runs through the Valley Oak Sensitive Natural Community (See Botanical Memorandum, GHD 2021). Wetland 2 was mapped to 20,619 ft^2 (0.47 acres). Photos are available in **Appendix D, Photo 1 through 4**. See **Appendix A, Figure 3-2** for the associated map of Wetland 2.

The vegetation in Wetland 2 was primarily classified as a Palustrine Scrub-Shrub wetland (PSS), transitioning into Palustrine Emergent (PEM) in the center, and into Palustrine Forested (PFO1) in the southern portion of the wetland. Dominant vegetation included arroyo willow (FACW), Himalayan blackberry (FAC), common rush (*Juncus patens*, FACW), and tall fescue (FAC), with lesser amounts of valley oak (*Quercus lobata*, FACU), Oregon ash (*Fraxinus latifolia*, FACW), poison oak (*Toxicodendron diversilobum*, FAC), hawthorne (*Crataegus monogyna*, FAC), brown dogwood (*Cornus glabrata*, FACW), green dock (*Rumex conglom*eratus, FACW), wild teasel (*Dipsacus fullonum*, FAC), foxtail barley (*Hordeum murinum*, FAC), pennyroyal (OBL), Italian rye grass (*Festuca perennis*, FAC), and harding grass (*Phalaris aquatica*, FACU). Wetland 2 passed the dominance test for hydrophytic vegetation.

Soil in Wetland 2 consisted of a very gravelly loam top horizon (0-3 inches) with a color of 10YR 3/2 and lower horizon (3-14 inches) consisting of mixed soils with loam and very gravelly loam, where 33% was loam with a color of 2.5Y 4/2 with 7% of 10YR 5/6 redoximorphic features, and 60% was a very gravelly loam with a color of 5YR 3/2. The top horizon contained mixed sedimentary deposits with organics and trash mixed in, and the lower horizon appeared depleted with redox and mixed sedimentary deposits. Soil observations included considerable mixing, deposition, and disturbance. The hydric soil indicator is Depleted Matrix (F3). Wetland 2 was dry during the site visit but appeared to seasonally pond and drains to Baechtel Creek. Secondary indicators of wetland hydrology at the site included water-stained leaves (B9) and geomorphic position (D2). Wetland 2 is hydrologically connected to a navigable waterway and is therefore assumed to be under USACE and RWQCB jurisdiction (**Table 3-1**). Please see attached data forms for sample points W2T1-W and W2T1-U in **Appendix B** and **Table 3-2** for additional details.

4.1.3 Wetland 3

Wetland 3 was identified south of Baechtel Creek in the central portion of the PSB. Wetland 3 consists of vegetated three-parameter wetland ditch that was observed to be hydrologically connected to Baechtel Creek and extends for approximately 1,600 feet along the east side of the railroad before crossing underneath the railroad through a culvert and then extending along the west side of the railroad for approximately another 750 feet. The mid portion of Wetland 3 runs through the Valley Oak Sensitive Natural Community (See Botanical Memorandum, GHD 2021). Wetland 3 was mapped to 27,747 ft^2 (0.64 acres). A photo is available in **Appendix D, Photo 5**. See **Appendix A, Figure 3-2 and 3-3** for the associated maps.

The vegetation within Wetland 3 is classified according to the Cowardin classification system as a Palustrine Scrub-Shrub wetland (PSS) and is surrounded by Himalayan blackberry and coyote brush (*Baccharis pilularis*, UPL). Dominant vegetation included Himalayan blackberry (FAC), and pennyroyal (OBL), with lesser amounts of coyote brush (UPL), Oregon ash (FACW), willow herb (*Epilobium densiflorum*, FACW), redtop (*Agrostis stolonifera*, FAC), green dock (FACW), wild teasel (*Dipsacus fullonum*, FAC), annual beard

grass (*Polypogon monspeliensis*, FACW), and Italian rye grass (FAC). Wetland 3 passed the dominance test for hydrophytic vegetation.

Soil in Wetland 3 consisted of 12 inches of 10YR 3/2 very gravelly loam with 5% of 7.5YR 3/4 redoximorphic features. There was a high organic content in the soil. The hydric soil indicator is Redox Dark Surface (F6). Wetland 3 was dry during the site visit but appeared to seasonally pond and drain to Baechtel Creek. The primary indicators of wetland hydrology at the site were drift deposits (B3) and water-stained leaves (B9), and secondary indicators included drainage patterns (D2), geomorphic position (D2), and passing the vegetation FAC-neutral test (D5). Wetland 3 is hydrologically connected to a navigable waterway and is therefore assumed to be under USACE and RWQCB jurisdiction (**Table 3-1**). Please see attached data forms for sample points W3T1-W and W3T1-U in **Appendix B and Table 3-2** for additional details.

4.1.4 Wetland 4

Wetland 4 was identified north of Haehl Creek (Watercourse 3) in the central portion of the PSB. Wetland 4 consists of a vegetated three-parameter wetland that extends for approximately 250 feet along the east side of the railroad. There appeared to be a trail through the wetland and several monitoring wells scattered throughout. Wetland 4 was likely originally connected to Wetland 5, but there appears to be a road prism that prevents hydrologic connectivity. Wetland 4 was mapped to 7,285 ft^2 (0.17 acres). Photos are available in **Appendix D, Photo 6 through 8**. See **Appendix A, Figure 3-3** for the associated map.

The vegetation within Wetland 4 is classified according to the Cowardin classification system as a Palustrine Emergent (PEM) in the center with Palustrine Scrub-Shrub wetland (PSS) along the edges. Dominant vegetation included Himalayan blackberry (FAC), and brown dogwood (FACW), and reed fescue (FAC), with lesser amounts of valley oak (FACU), poison oak (FAC), and redtop (FAC). Wetland 4 passed the dominance test for hydrophytic vegetation.

Soil in Wetland 4 consisted of 0-2 inches of 10YR 2/2 clay loam with 2% of 7.5YR 4/6 redoximorphic features, and 2-12 inches of 10YR 2/2 clay loam with 8% of 7.5YR 4/6 redoximorphic features. The hydric soil indicator is Redox Dark Surface (F6). Wetland 4 was dry during the site visit but appears to seasonally pond. It is likely that Wetland 4 historically drained into what this report defines as Wetland 5, which is hydrologically connected to Haehl creek. The primary indicator of wetland hydrology at the site included surface soil cracks (B6) and secondary indicators included geomorphic position (D2) and passing the vegetation FAC-neutral test (D5). Wetland 4 is likely under USACE and RWQCB jurisdiction (**Table 3-1**), although not directly connected to adjacent wetlands, it is likely historically connected and may still be connected to a navigable water way via groundwater or other pathways outside of the PSB. Please see attached data forms for sample points W4T1-W and W4T1-U in **Appendix B** and **Table 3-2** for additional details.

4.1.5 Wetland 5

Wetland 5 was identified north of Haehl Creek in the central portion of the PSB. Wetland 5 consists of a vegetated three-parameter wetland that extends for approximately 600 feet along the east side of the railroad before crossing underneath the railroad through an old, square cement culvert and then extending along the west side of the railroad for approximately another 400 feet. Wetland 5 was likely originally connected to Wetland 4, but the intersecting road prism prevents surface-level hydrologic connectivity. As it is mapped, Wetland 5 is hydrologically connected to Haehl Creek on the west side of the railroad, but it is likely that stormwater flow may make it hydrologically connected to Haehl creek on the east side of the railroad as well, following what appears to be a trail. Wetland 5 was mapped to 24,422 ft^2 (0.56 acres). See **Appendix A, Figure 3-3** for the associated map.

Vegetation within Wetland 5 is classified according to the Cowardin classification system as Palustrine Emergent (PEM) and Palustrine Scrub-Shrub wetland (PSS). This area was primarily emergent in the center with shrubs growing along the edges. Dominant vegetation included Himalayan blackberry (FAC), coyote brush (UPL), and pennyroyal (OBL), with lesser amounts of curly dock (*Rumex crispus*, FAC), slender sedge (*Carex gracilior*, not rated), harding grass (FACU), common rush (FACW), and sharp point fluellin (*Kickxia elatine*, FAC). Wetland 5 passed the dominance test for hydrophytic vegetation.

Soil in Wetland 5 consisted of 0-12 inches of 10YR 3/1 gravelly loam with 15% of 7.5YR 3/4 redoximorphic features. The hydric soil indicator is Redox Dark Surface (F6). Wetland 5 was dry during the site visit but appeared to seasonally pond and likely drains through the culvert underneath the railroad and drains to Haehl Creek. Field observations concluded that Wetland 5 likely flows seasonally. Primary indicators of wetland hydrology at the site included predominant surface soil cracks (B6) and water-stained leaves (B9), and secondary indicators included drainage patterns (B10), geomorphic position (D2) and passing the vegetation FAC-neutral test (D5). Wetland 5 is hydrologically connected to a navigable waterway and is therefore assumed to be under USACE and RWQCB jurisdiction (**Table 3-1**). Please see attached data forms for sample points W5T1-W and W5T1-U in **Appendix B and Table 3-2** for additional details.

4.1.6 Wetland 6

Wetland 6 was identified south of Haehl Creek in the southern portion of the PSB. Wetland 6 consists of a partially vegetated three-parameter wetland that extends for approximately 830 feet along the east side of the railroad, following what appears to be a compacted trail that seasonally floods. Wetland 6 is very likely hydrologically connected to Haehl Creek to the north during rain events, as evidenced by stormwater pathways and topography. Wetland 6 was mapped to 6,473 ft^2 (0.15 acres). A photo is available in **Appendix D, Photo 9**. See **Appendix A, Figure 3-3 and 3-4** for the associated maps.

The vegetation within Wetland 6 is classified according to the Cowardin classification system as Palustrine Emergent (PEM) with shrubs along the edges. Dominant vegetation included Himalayan blackberry (FAC) and reed fescue (FAC), with lesser amounts of blue-eyed grass (later identified as *Sisyrinchium bellum*, FACW), slender juncus, (*Juncus occidentalis*, FACW), chicory (*Cichorium intybus*, FACU), pennyroyal (OBL), tall oatgrass (*Arrhenatherum elatius*, UPL), little rattlesnake grass (*Briza minor*, FAC), willow herb (FACW), bird's foot trefoil (*Lotus corniculatus*, FAC), and valley oak (FACU). Wetland 6 passed the dominance test for hydrophytic vegetation.

Soil in Wetland 6 consisted of 0-4 inches of 10YR 3/2 gravelly loam with 3% of 7.5YR 4/6 redoximorphic features, and 4-12 inches of 10YR 3/2 loam with 10% of 7.5YR 4/6 redoximorphic features. The hydric soil indicator is Redox Dark Surface (F6). Wetland 6 was dry during the site visit but appeared to seasonally pond and move through the culvert underneath the railroad and drain to Haehl Creek. The primary indicator of wetland hydrology at the site included predominant surface soil cracks (B6) and the secondary indicator included geomorphic position (D2). Wetland 6 is likely hydrologically connected to a navigable waterway and is therefore likely under USACE and RWQCB jurisdiction (**Table 3-1**). Please see attached data forms for sample points W6T1-W and W6T1-U in **Appendix B and Table 3-2** for additional details.

4.1.7 Wetland 7

Wetland 7 was identified south of Haehl Creek in the southern portion of the PSB. Wetland 7 consists of a vegetated three-parameter wetland that extends for approximately 1,200 feet along the west side of the railroad, following what appears to be a ditch that seasonally floods. Wetland 7 is very likely hydrologically connected to Haehl Creek to the north during rain events as evidenced by stormwater pathways and

topography. Wetland 7 was mapped to 13,878 ft^2 (0.32 acres). Photos are available in **Appendix D, Photo 10 through 12**. See **Appendix A, Figure 3-3 and 3-4** for the associated maps.

The vegetation within Wetland 7 is primarily classified according to the Cowardin classification system as Palustrine Scrub-Shrub wetland (PSS) with some patches of as Palustrine Emergent (PEM) in the wider locations. Dominant vegetation included Himalayan blackberry (FAC) and common rush (FACW), with lesser amounts of poison oak (FAC), pennyroyal (OBL), soft rush (*Juncus effusus*, FACW), and green dock (FACW). Wetland 7 passed the dominance test for hydrophytic vegetation.

Soil in Wetland 7 consisted of 0-10 inches of 10YR 3/2 loam with 5% of 7.5YR 3/4 redoximorphic features. The hydric soil indicator is Redox Dark Surface (F6). Wetland 7 was dry during the site visit but appeared to seasonally pond and drains to Haehl Creek. The primary indicator of wetland hydrology at the site included drift deposits (B3) and the secondary indicators included geomorphic position (D2) and passing the vegetation FAC-neutral test (D5). Wetland 7 is likely hydrologically connected to a navigable waterway and is therefore likely under USACE and RWQCB jurisdiction (**Table 3-1**). Please see attached data forms for sample points W7T1-W and W7T1-U in **Appendix B** and **Table 3-2** for additional details.

4.1.8 Wetland 8

Wetland 8 was identified in the southern most portion of the PSB. Wetland 8 consists of a vegetated three-parameter wetland that extends for approximately 800 feet along the east side of the railroad, following what appears to be a trail that seasonally floods, and is connected to the west side of the rail through a culvert where Wetland 8 extends for approximately 250 feet along the west side of the rail. Wetland 8 is hydrologically connected during rain events to an unnamed ephemeral tributary that begins within the edge of the PSB and flows in a northeasterly direction outside of the PSB. Wetland 8 was mapped to 16,408 ft^2 (0.38 acres). Photos are available in **Appendix D, Photo 13**. See **Appendix A, Figure 3-4** for the associated map.

The vegetation within Wetland 8 is classified according to the Cowardin classification system as Palustrine Emergent (PEM) and is surrounded by the Valley Oak Sensitive Natural Community (See Botanical Memorandum, GHD 2021). Dominant vegetation included valley oak (UPL), redtop (FAC), reed fescue (FAC), with lesser amounts of Himalayan blackberry (FAC) and harding grass (FACU). Wetland 8 passed the dominance test for hydrophytic vegetation.

Soil in Wetland 8 consisted of 0-5 inches of 10YR 3/2 gravelly loam with 2% of 7.5YR 3/4 redoximorphic features, and 5-12 inches of 10YR 3/2 loam with 5% of 7.5YR 3/4 redoximorphic features. The hydric soil indicator is Redox Dark Surface (F6). Wetland 8 was marginally wet during the site visit, was somewhat saturated in the area nearest to the ephemeral tributary. Wetland 8 appeared to seasonally pond and drains to the unnamed ephemeral tributary which runs northeast outside of the PSB. The unnamed ephemeral tributary eventually connects with Haehl Creek outside of the PSB (**Appendix A, Figure 5**). The primary indicator of wetland hydrology at the site included predominant surface soil cracks (B6) and the secondary indicator was geomorphic position (D2). Wetland 8 is likely hydrologically connected to an ephemeral stream which is connected to a navigable waterway and is therefore likely under USACE and RWQCB jurisdiction (**Table 3-1**). Please see attached data forms for sample points W8T1-W and W8T1-U in **Appendix B** and **Table 3-2** for additional details.

4.2 Other Waters of the U.S. and/or State

4.2.1 Broaddus Creek

Broaddus Creek is mapped in **Appendix A, Figure 3-1** and photos are available in **Appendix D, Photo 14 through 16**. A small portion of Broaddus Creek runs through the northern most extent of the PSB, where it passes under a bridge beneath the railroad. Broaddus Creek flows for approximately 500 feet through the PSB from west to east and OHWM was mapped with a GPS in the field to define the edges of the Creek based on slope-break and vegetation indicators to mark the extent of waters within the PSB. A total of 7,758 ft^2 (0.18 acres) of Other Waters below the OHWM within Broaddus Creek were observed within the PSB, and this may be classified according to the Cowardin system as Riverine Intermittent Stream Bed with cobble-gravel (R4SB3). Broaddus Creek flows into Davis Creek, to Outlet Creek, and ultimately to the Eel River, and therefore is assumed to be under the jurisdiction of the USACE and RWQCB (**Table 3-1**). The riparian area around Broaddus Creek did not contain hydrophytic vegetation. The Broaddus Creek riparian area is discussed in the Botanical Memo (GHD 2021).

4.2.2 Baechtel Creek

Baechtel Creek is mapped in **Appendix A, Figure 3-2** and photos are available in **Appendix D, Photo 17 through 19**. A small portion of Baechtel Creek runs through the northcentral extent of the PSB, where it passes under a bridge beneath the railroad. Baechtel Creek flows for approximately 150 feet across the PSB from west to east and the OHWM was mapped with a GPS in the field to define the edges of the Creek based on slope-break and vegetation indicators to mark the extent of waters within the PSB. A total of 3,901 ft^2 (0.09 acres) of Other Waters below the OHWM within Baechtel Creek were observed within the PSB, and this may be classified according to the Cowardin system as Riverine Intermittent Stream Bed with cobble-gravel (R4SB3). Baechtel Creek flows into Davis Creek, to Outlet Creek, and ultimately to the Eel River, and therefore is assumed to be under the jurisdiction of the USACE and RWQCB (**Table 3-1**). The riparian area around Baechtel Creek did not contain additional wetlands aside from the wetlands that were hydrologically connected to it (W1, W2, W3). The Baechtel Creek riparian area is discussed in the Botanical Memo (GHD 2021).

4.2.3 Haehl Creek

Haehl Creek is mapped in **Appendix A Figure 3-3** and photos are available in **Appendix D, Photo 20 and 21**. A small portion of Haehl Creek runs through the southcentral extent of the PSB, where it passes under a bridge beneath the railroad. Haehl Creek flows for approximately 110 feet across the PSB from west to east and OHWM was mapped with a GPS in the field to define the edges of the creek based on slope-break and vegetation indicators to mark the extent of waters within the PSB. A total of 2,202 ft^2 (0.05 acres) of Other Waters below the OHWM within Haehl Creek were observed within the PSB, and this may be classified according to the Cowardin system as Riverine Intermittent Stream Bed with cobble-gravel (R4SB3). Haehl Creek flows into Davis Creek, to Outlet Creek, and ultimately to the Eel River, and therefore is assumed to be under the jurisdiction of the USACE and RWQCB (**Table 3-1**). The riparian area around Haehl Creek did not contain additional wetlands aside from the wetlands that were hydrologically connected to it (W5, likely W6 and W7). The Haehl Creek riparian area is discussed in the Botanical Memo (GHD 2021).

Table 4.1 Wetlands and Other Waters within the PSB

Wetland or Other Water Name	Location (lat/long) center of feature	Size of Wetland or Other Water (ft^2)	Likely Jurisdictional?	
			USACE	RWQCB
Wetland 1	(39.40531603, -123.3475256)	2,162	Yes	Yes
Wetland 2	(39.40311452, -123.3463592)	20,619	Yes	Yes
Wetland 3	(39.40161256, -123.3452053)	27,747	Yes	Yes
Wetland 4	(39.39901266, -123.3434175)	7,285	Yes	Yes
Wetland 5	(39.39757442, -123.3425526)	24,422	Yes	Yes
Wetland 6	(39.39518215, -123.3409271)	6,473	Yes	Yes
Wetland 7	(39.3943902, -123.3406364)	13,878	Yes	Yes
Wetland 8	(39.3928101, -123.3393926)	16,408	Yes	Yes
Broaddus Creek	(39.41058321, -123.3504502)	7,758	Yes	Yes
Baechtel Creek	(39.40464833, -123.3472472)	3,901	Yes	Yes
Haehl Creek	(39.39640982, -123.3417807)	2,202	Yes	Yes
Total Wetlands and Other Waters in the PSB		**132,855** ft^2 **(3.05 acres)**		

Table 4.2 Wetland Transect Sampling Locations

Sample Point	Location (lat/long) center of transect
W1T1 / U1T1	(39.40500754, -123.3473555)
W2T1 / U2T1	(39.40242629, -123.345835)
W3T1 / U3T1	(39.40061214, -123.3446326)
W4T1 / U4T1	(39.39887872, -123.3433293)
W5T1 / U5T1	(39.39729803, -123.3425263)
W6T1 / U6T1	(39.39504183, -123.3408481)
W7T1 / U7T1	(39.39544803, -123.3413218)
W8T1 / U8T1	(39.39225422, -123.3390267)

4.3 Upland Sampling Points

Upland sampling points were also collected to characterize areas that are likely to be affected by the Project. No wetlands were detected within the areas characterized by the following upland points (**Table 3.3**).

4.3.1 Upland 1

The Upland 1 sample point was located in the northcentral portion of the PSB, just north of Wetland 1, and east of the railroad. This area was in a ditch with compacted soils and contained some wetland associated plants. However, there was no redoximorphic features and no associated hydrology indicators. The site was dominated by valley oak (FACU), Himalayan blackberry (FAC), common rush (FACW), and reed fescue (FAC) with lesser amounts of poison oak (FAC), common velvetgrass (FAC), redtop (FAC), slim oat (*Avena barbata*, UPL), and hairy vetch (*Vicia villosa*, UPL). Soils did not show hydric soil characteristics and

contained a gravelly loam with matrix color of 10YR 2/2 for a full 10 inches with no redoximorphic features. There was compacted gravel, and the ditch was near the old railroad prism. The site did not show any primary or secondary indicators of wetland hydrology.

4.3.2 Upland 2

The Upland 2 sample point was located in the southern portion of the PSB, just north of Wetland 4, and east of the railroad. This area was in a low spot in a compacted trail and contained some wetland associated plants. However, there was no redoximorphic features. The site was dominated by Himalayan blackberry (FAC), redtop (FAC), common rush (FACW), and reed fescue (FAC) with lesser amounts of valley oak (FACU), bird's foot trefoil (FAC), ribwort (*Plantago lanceolata*, FACU), and softchess (*Bromus hordeaceus*, FACU). While the site did contain one secondary hydrology indicator (geomorphic position (D2) being in a depression, soils did not show hydric soil characteristics and contained a loam with matrix color of 10YR 3/2 for a full 12 inches with no redoximorphic features. There was compacted gravel, and the ditch was near the old railroad prism. The site did not show any primary indicators of wetland hydrology.

4.3.3 Upland 3

The Upland 3 sample point was located in the southern portion of the PSB, just north of Wetland 7, and west of the railroad. This area was in a ditch and contained some wetland associated plants and is likely in an area where Wetland 7 drains to Haehl Creek. However, there was no redoximorphic features and the ditch does not appear to hold water for a sufficient amount of time at this location. The site was dominated by California black oak (*Quercus kelloggii*, UPL), Himalayan blackberry (FAC), and a lesser amount of poison oak (FAC). While the site did contain one secondary hydrology indicator (geomorphic position (D2), soils did not show hydric soil characteristics and contained a very cobbly gravelly loam with matrix color of 10YR 3/2 for a full 12 inches with no redox. The site did not show any primary indicators of wetland hydrology.

Table 4.3 Upland Sampling Point Locations

Upland Sampling Point Name	Location (Lat/Long)
Upland 1 (Up1)	39.40612301, -123.3416725
Upland 2 (Up2)	39.39934004, -123.3436562
Upland 3 (Up3)	39.39593403, -123.3416725

5. Conclusions

The aquatic resources delineation for the Willits Rail with Trail Project, completed on July 6th through 8th, 2021, determined the extent of three-parameter wetlands and Other Waters within the PSB based on hydrophytic vegetation, hydric soils, and wetland hydrology using methods and indicators outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0)* (USACE 2010). Three intermittent creeks (jurisdictional Other Waters) were observed running within the PSB: Broaddus Creek, Baechtel Creek, and Haehl Creek. The total area of these Other Waters mapped within the PSB is 13,861 ft^2 (0.32 acres). The total area of three-parameter wetlands mapped within the PSB is 118,994 ft^2 (2.7 acres), and due to their hydrological connections with the Other Waters, are likely considered USACE and RWQCB jurisdictional. The total area of all three-parameter wetlands and Other Waters encompasses 132,855 ft^2 or 3.05 acres, or 12% of the PSB. Data

forms are attached showing sample plot data collected in transects across wetland boundaries and additional upland sampling points (**Appendix B**).

6. Special Terms and Conditions

6.1 Purpose of this Report

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

6.2 Scope and Limitations

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

The delineation conclusions were based on the information available during the period of the investigation, which took place on July 6th-8th 2021.

The opinions, conclusions, and any recommendations in this report are based on conditions encountered and information reviewed by the date of preparation of the report. Site conditions may change after the date of this report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change unless contracted to do so.

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

The opinions, conclusions, and any recommendations in this report are based on the information obtained from and testing undertaken at or in connection with specific sample points. Conditions at other locations of the site may be different from the conditions found at the specific sample points.

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8. Report Preparers

8.1 Client

City of Willits, 111 E. Commercial Street, Willits, CA 95490 USA

8.2 GHD

Rose E. Dana, Botanist, rose.dana@ghd.com, 707-267-2220

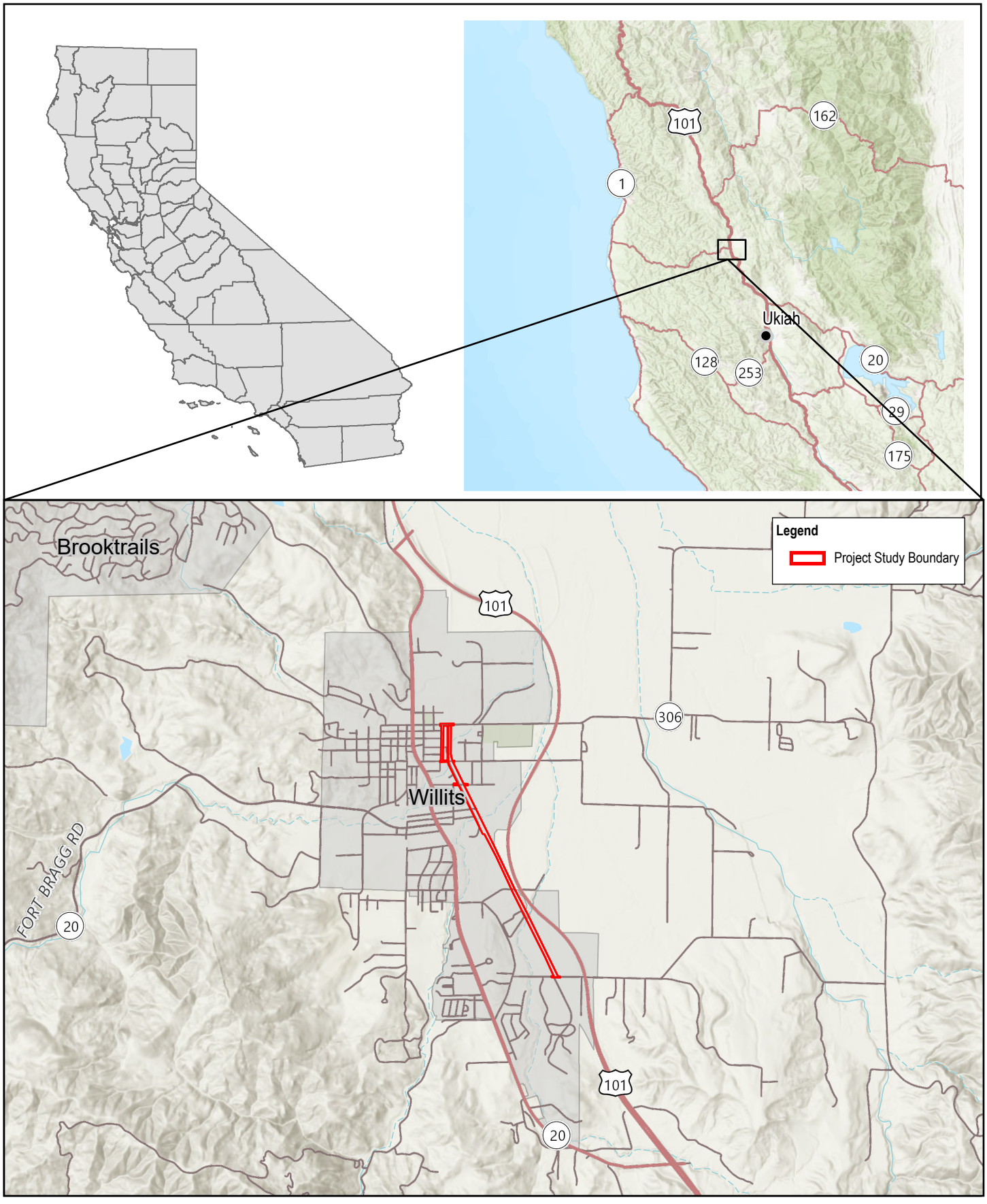
Kelsey McDonald, Plant Ecologist, kelsey.mcdonald@ghd.com, 707-443-8326

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Misha Schwarz, Project Director, misha.schwarz@ghd.com, 707-267-2259

Appendix A

Figures



Paper Size ANSI A

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Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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GHD

City of Willits
Willits Rail Trail Project

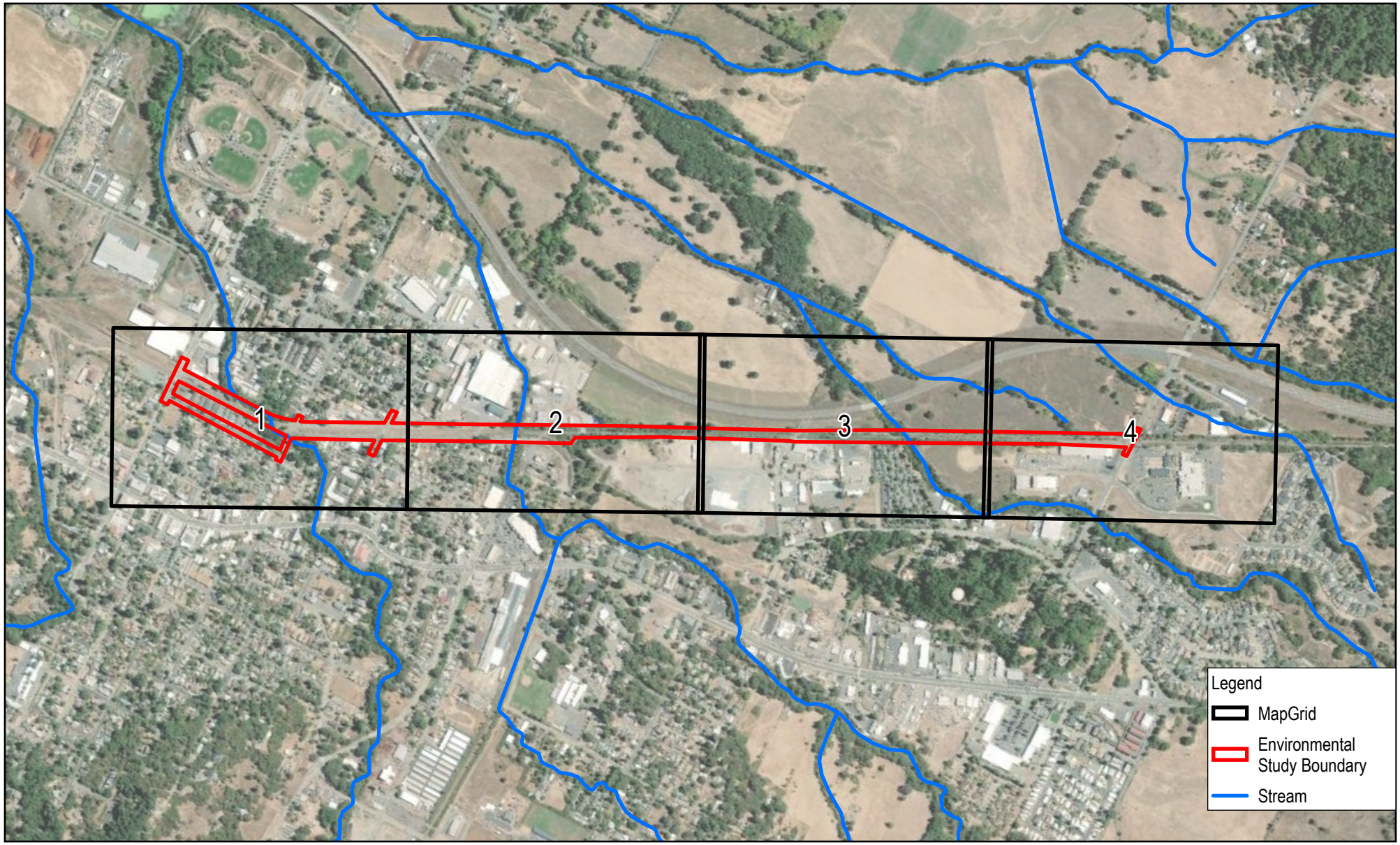
Project No. 11230579
Revision No. -
Date 1/10/2022

Vicinity Map

FIGURE 1

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City of Willits
Willits Rail Trail Project

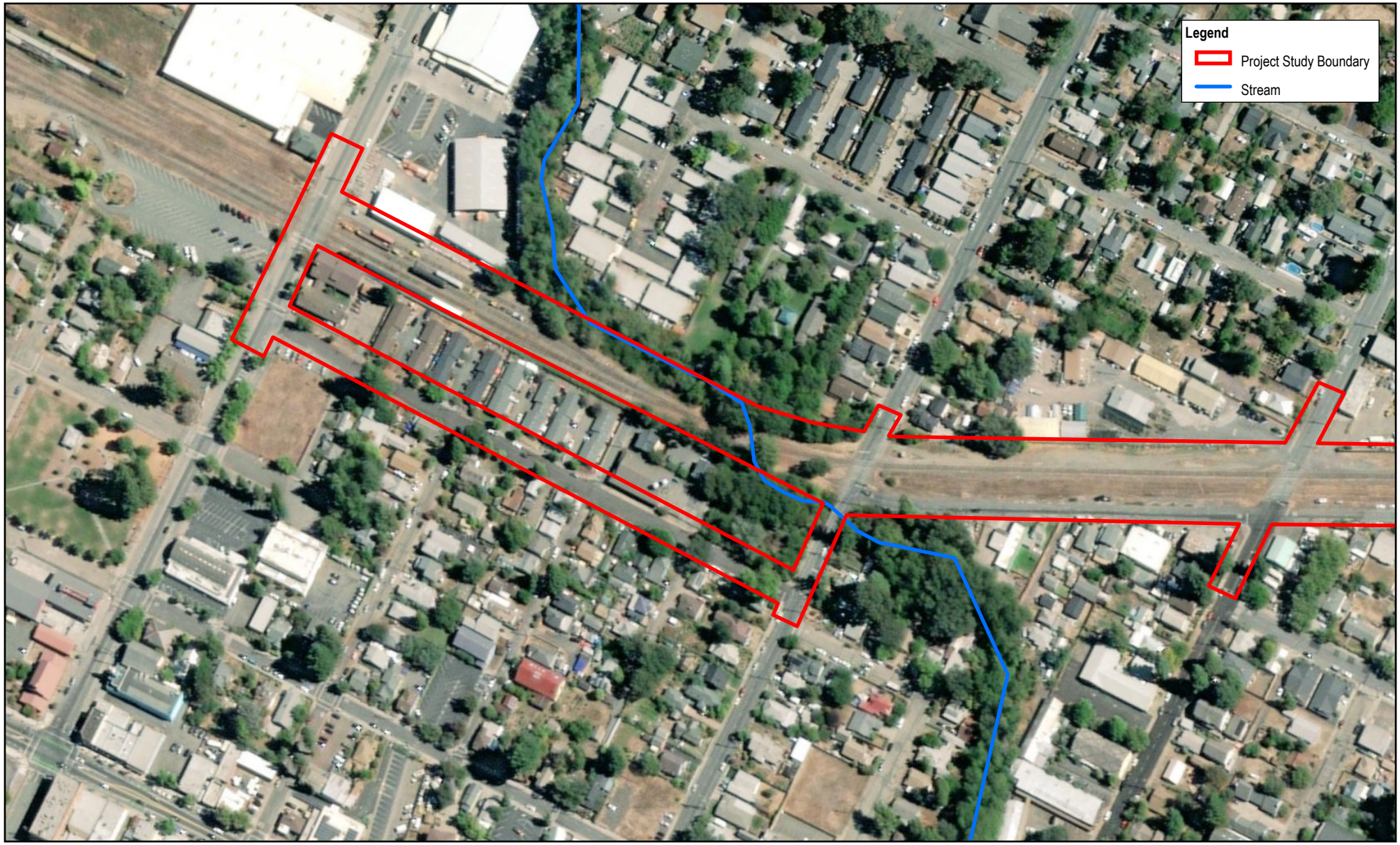
Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2

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Paper Size ANSI A

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
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Date **1/10/2022**

Study Boundary

FIGURE 2-1

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Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2-2

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GHD

City of Willits
Willits Rail Trail Project

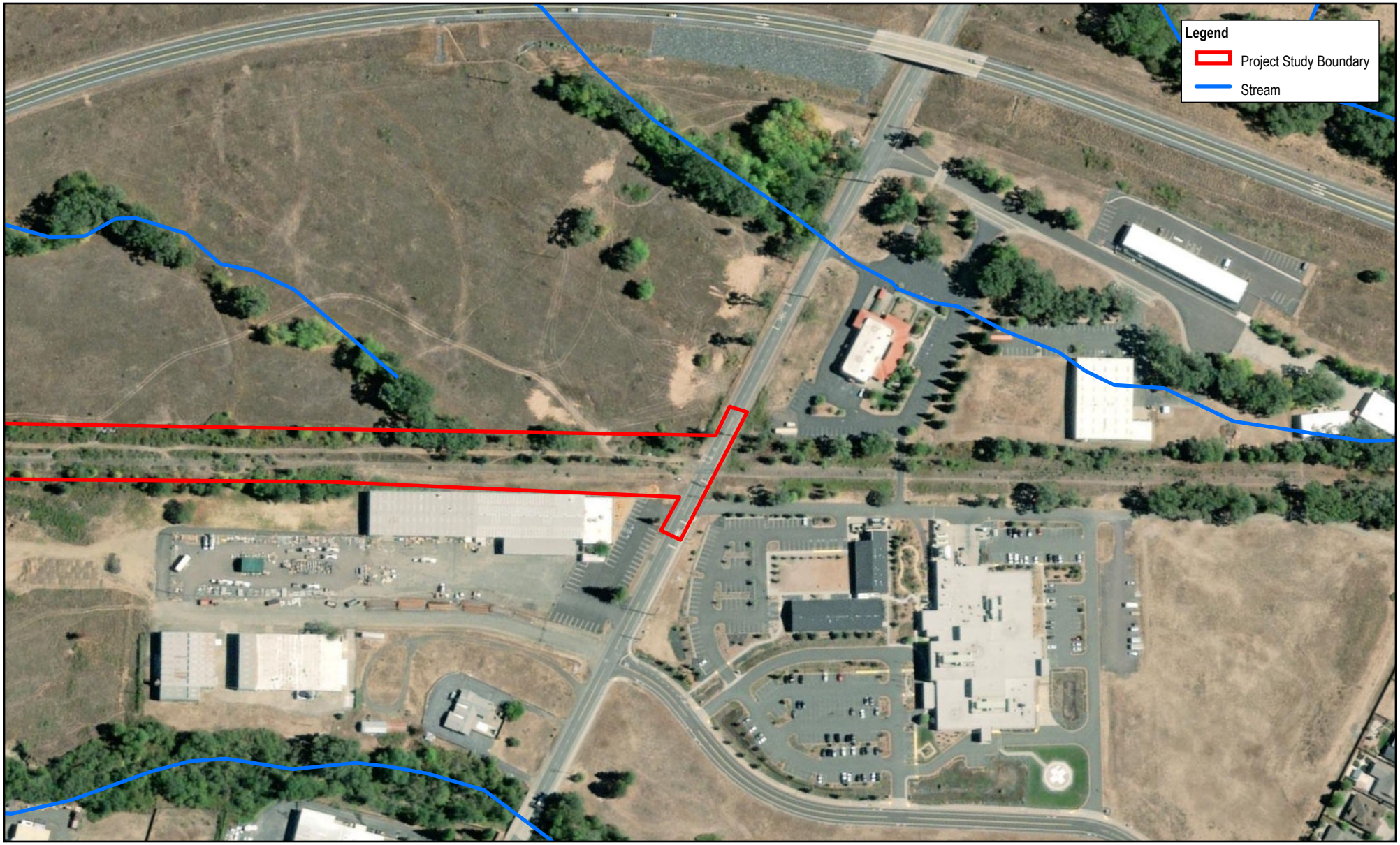
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Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2-3

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GHD

City of Willits
Willits Rail Trail Project

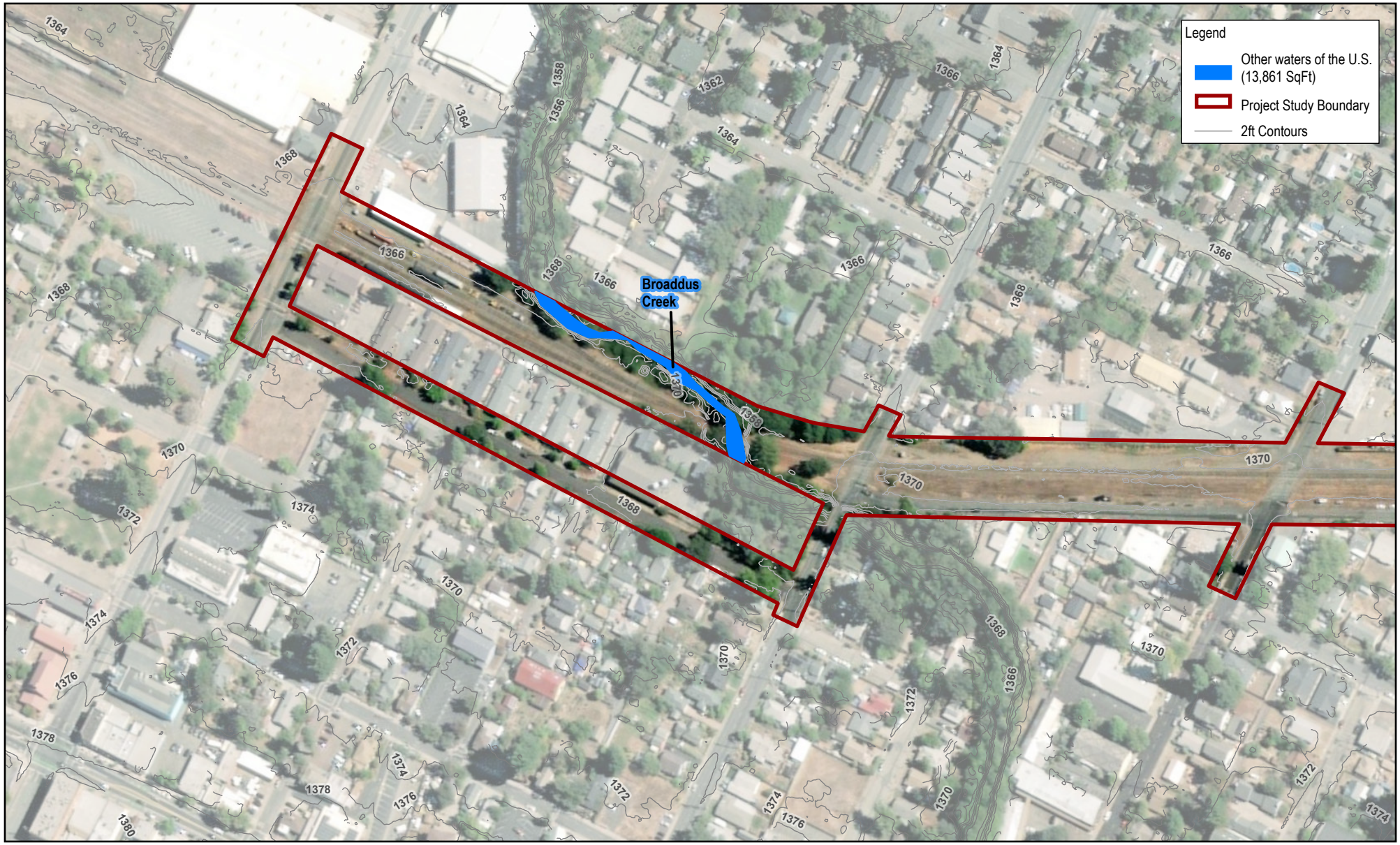
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Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2-4

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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GHD

City of Willits
Willits Rail Trail Project

Aquatic Resources Delineation Map

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

FIGURE 3-1

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_13_AqR
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World Imagery Inside: Maxar, Microsoft. Created by: ethompson3





Paper Size ANSI A

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
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GHD

City of Willits
Willits Rail Trail Project

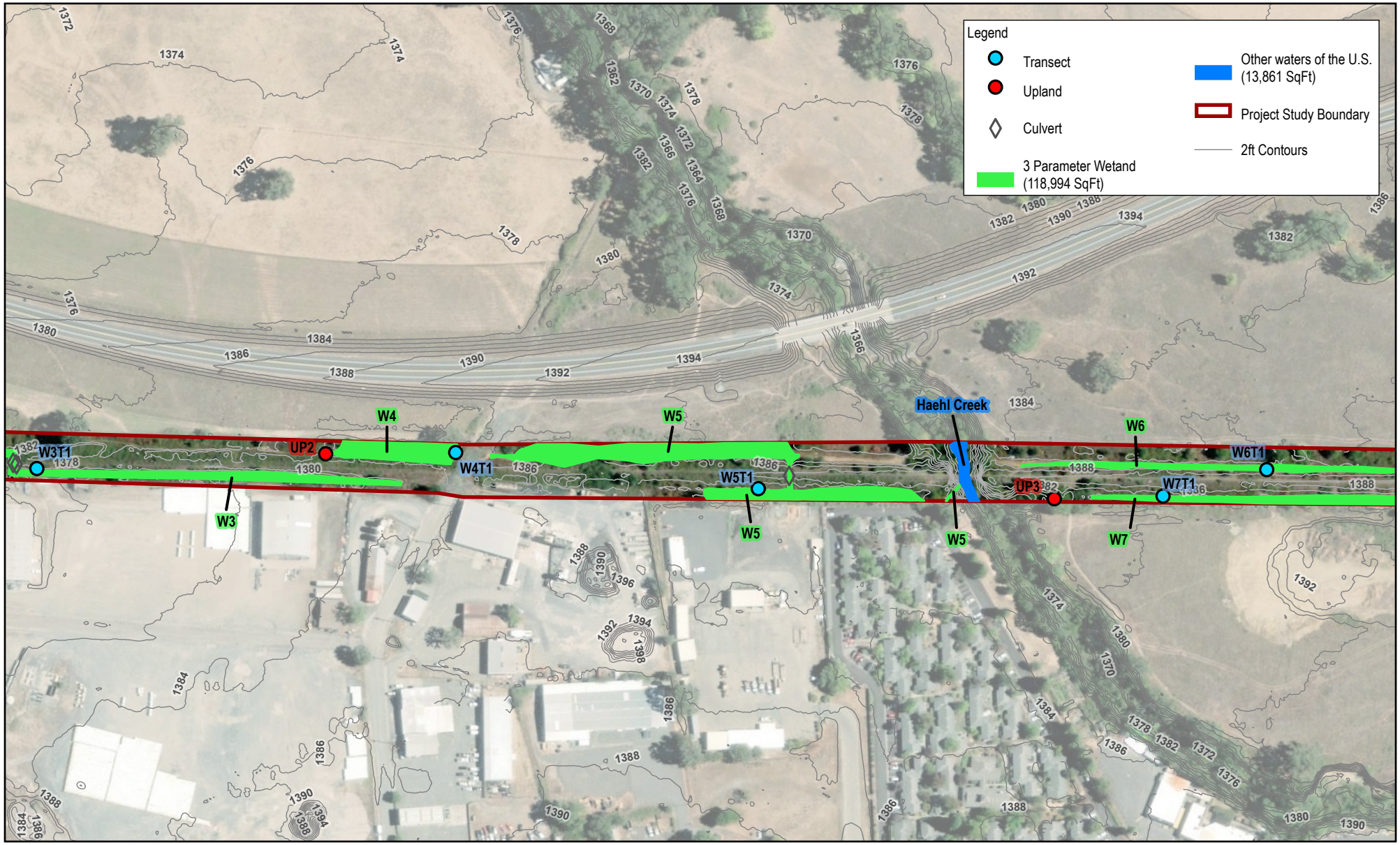
Aquatic Resources Delineation Map

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

FIGURE 3-2

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Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Aquatic Resources Delineation Map

FIGURE 3-3

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_13_AqR
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World Imagery Inside: Maxar, Microsoft. Created by: ethompson3





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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Aquatic Resources Delineation Map

FIGURE 3-4

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City of Willits
Willits Rail Trail Project

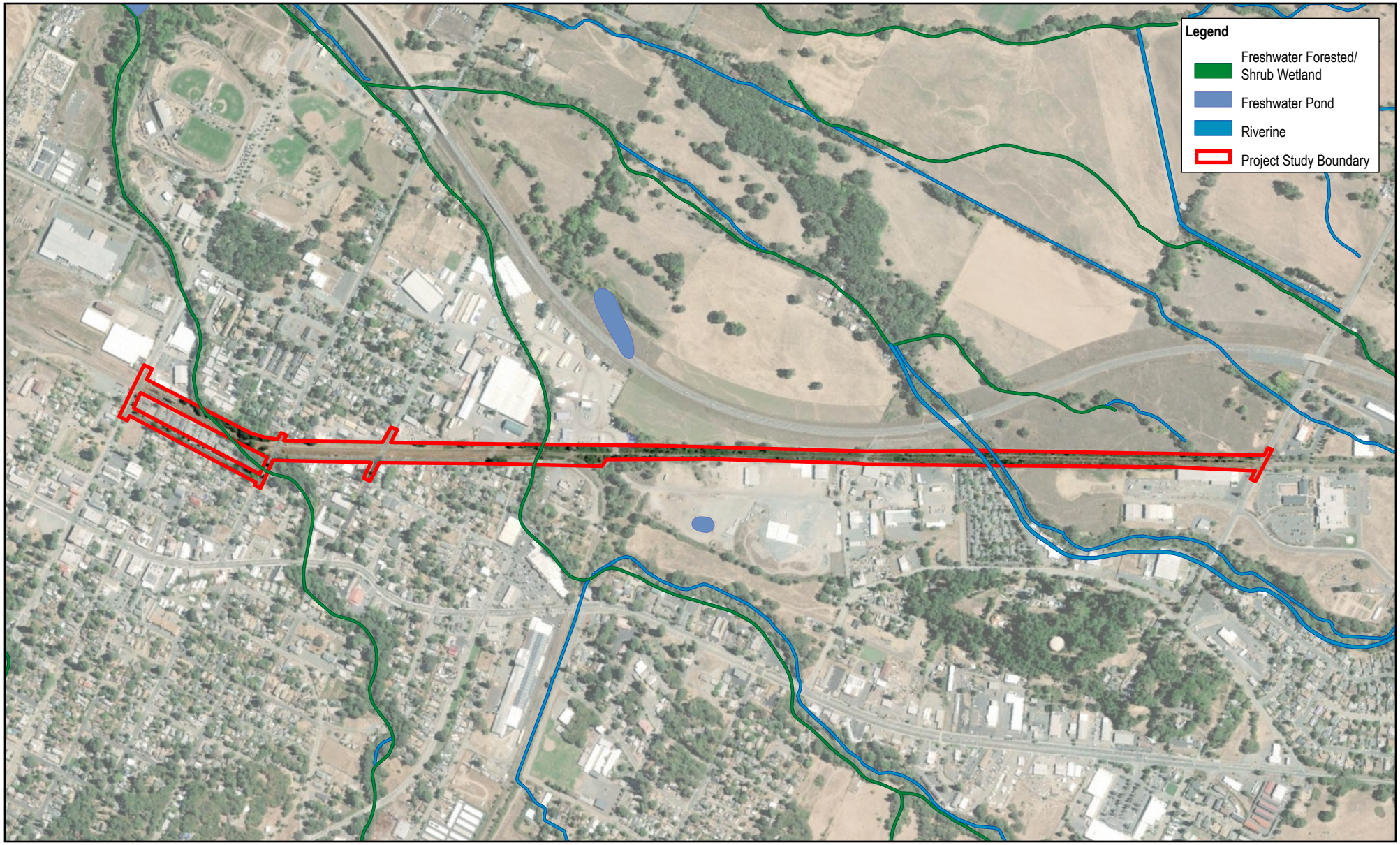
Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

NRCS Soils

FIGURE 4

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City of Willits
Willits Rail Trail Project

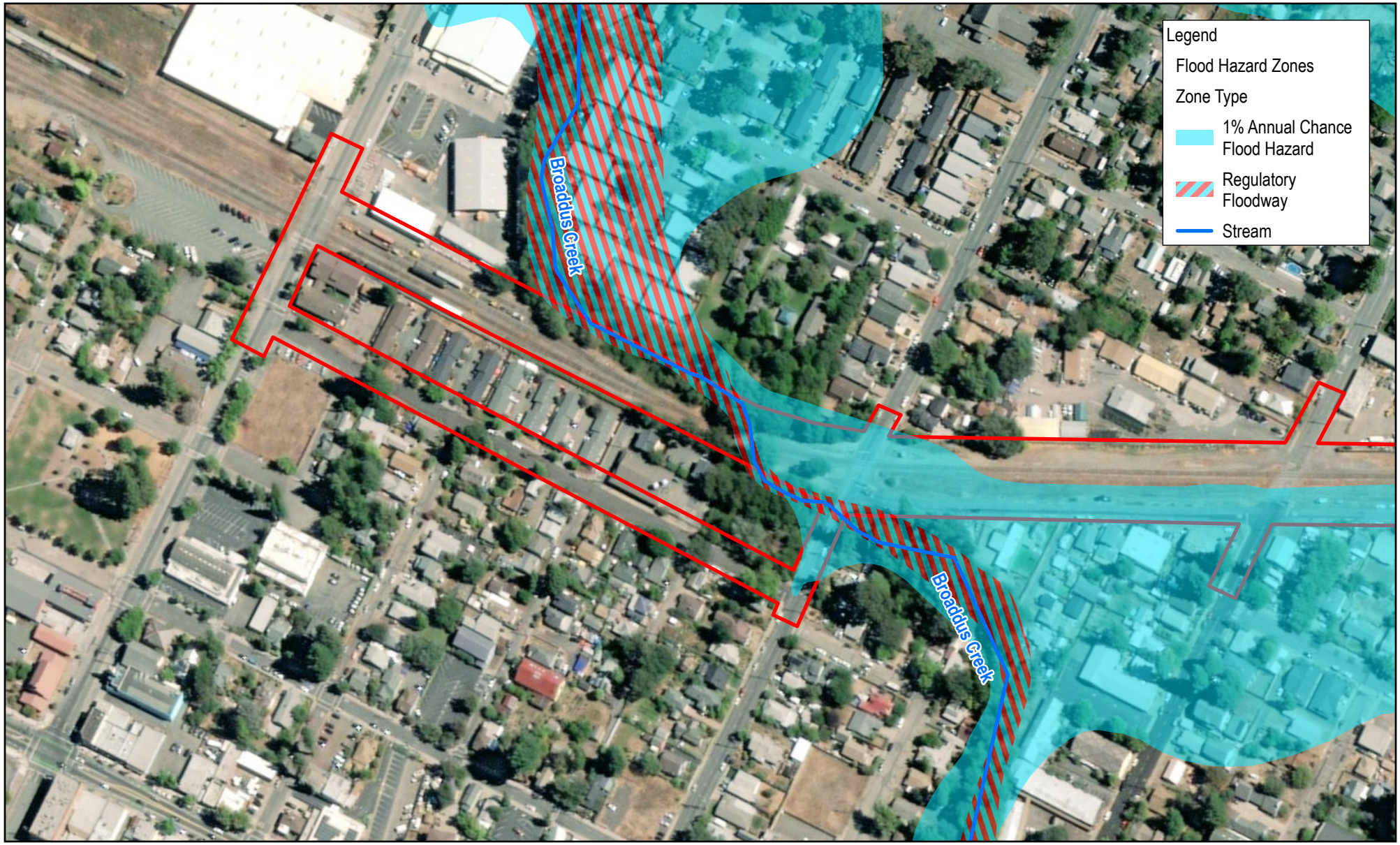
NWI Map

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

FIGURE 5

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GHD

City of Willits
Willits Rail Trail Project

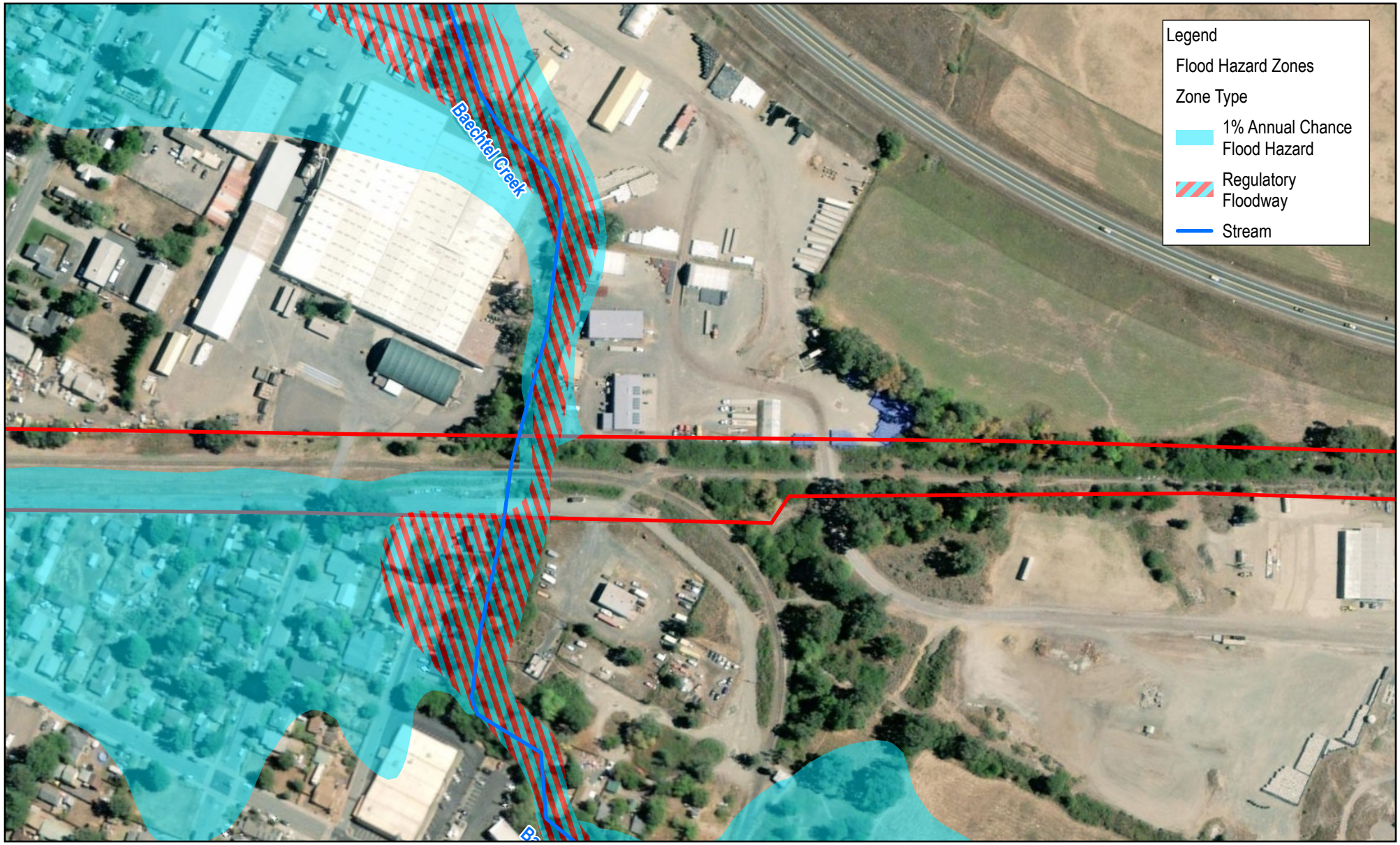
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Project No. **11230579**
Revision No. **-**
Date **1/11/2022**

FIGURE 6-1

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Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

City of Willits
Willits Rail Trail Project

FEMA

Project No. **11230579**
Revision No. **-**
Date **1/11/2022**

FIGURE 6-2

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Paper Size ANSI A

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GHD

City of Willits
Willits Rail Trail Project

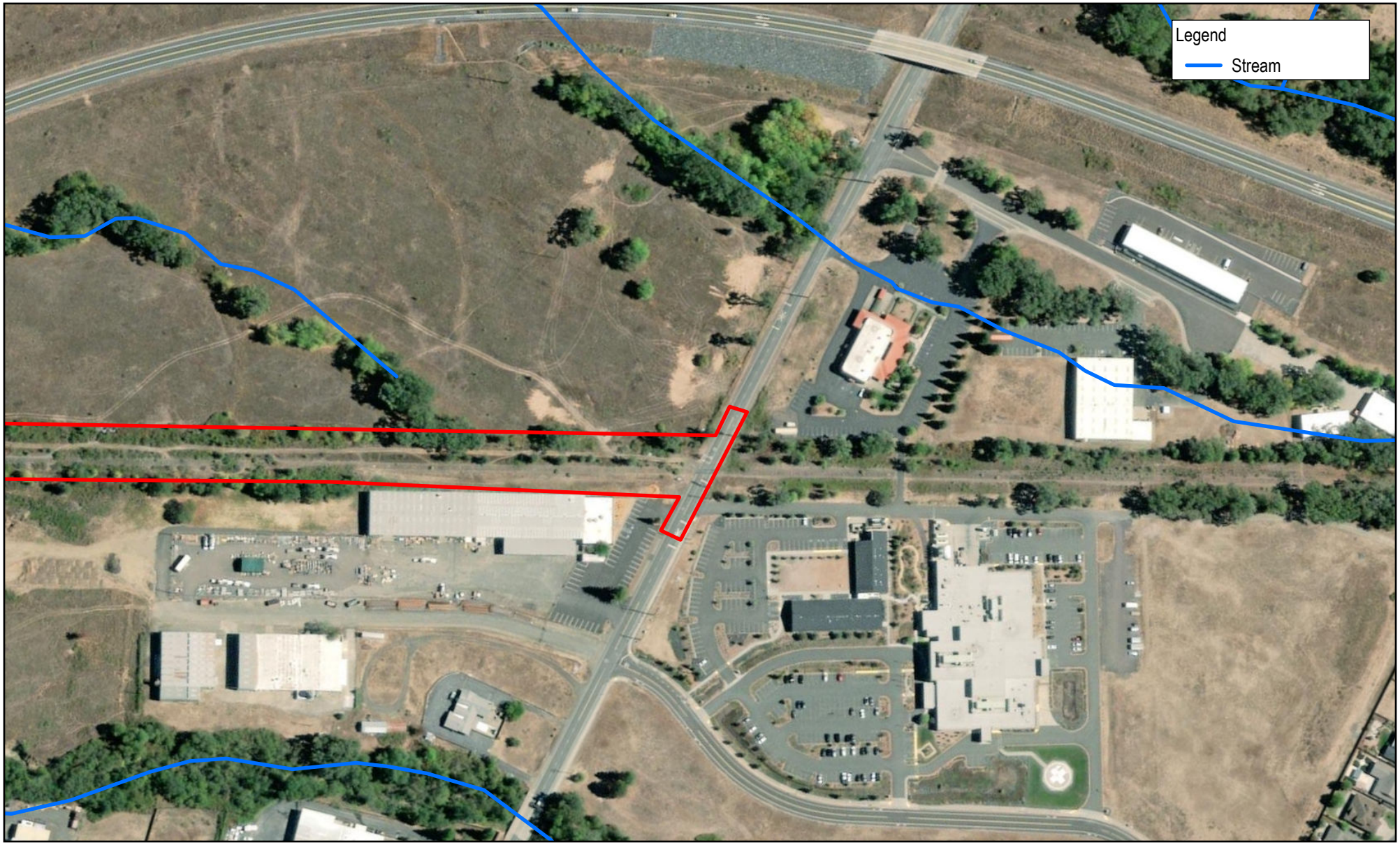
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Project No. **11230579**
Revision No. **-**
Date **1/11/2022**

FIGURE 6-3

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Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

GHD

City of Willits
Willits Rail Trail Project

FEMA

Project No. **11230579**
Revision No. **-**
Date **1/11/2022**

FIGURE 6-4

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Appendix B

Data Sheets

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

Project/Site: Willits Bail Trail City/County: Mendocino Sampling Date: 7/6/21
Applicant/Owner: City of Willits State: CA Sampling Point: WTT1-W
Investigator(s): KelseyMcDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR): A Lat: 39.40500754 Long: -123.347356 Datum: WGS84
Soil Map Unit Name: Urban land NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Vegetated ditch, hydrologically connected to Baechtel Creek.

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: 1m²)			
1. Mentha pulegium	5	Y	OBL
2. Carex tumulicola	1		FACU
3. Equisetum telmateia	1		FACW
4. Cyperus eragrostis	1		FACW
5. Festuca arundinacea	2	Y	FAC
6. Holcus lanatus	1		FAC
7.			
8.			
9.			
10.			
11.			
	11 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	2	x 2 =	4
FAC species	3	x 3 =	9
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	10 (A)		18 (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
✓ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: WTT-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR3/2	99	7.5YR3/4	1	C	M	Loam	
5-14	10YR3/2	90	7.5YR3/4	10	C	M	loam	strong redox

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/6/21
Applicant/Owner: City of Willits State: CA Sampling Point: WITT-U
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): Convex Slope (%): 80
Subregion (LRR): A Lat: 39.40500754 Long: -123.347356 Datum: WGS84
Soil Map Unit Name: Urban Land NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil ✓, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: 5ft from wetland edge. Rocked rail prism

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m²)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus kelloggii	40	Y	Upl
2. Fraxinus latifolia	10	N	FAC
3.			
4.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 3m²)			
1. Toxicodendron diversilobum	3	Y	FACU
2. Baccharis pilularis	3	Y	Upl
3. Rubus armeniacus	2	Y	FAC
4. Quercus lobata	1		FACU
5.			
	9	= Total Cover	

Herb Stratum (Plot size: _____)			
1. Avena barbata	2		UPL
2. Dactylis glomerata	2		FACU
3. Holcus lanatus	1		FAC
4. Equisetum telmateia	3	Y	FACW
5. Elymus glaucus	3	Y	FACU
6. Bromus diandrus	1		UPL
7. Trifolium hirtum	1		UPL
8. Festuca arundinacea	4	Y	FAC
9.			
10.			
11.			
	16	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 80

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: 42% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	17	x 3 =	51
FACU species	9	x 4 =	36
UPL species	47	x 5 =	235
Column Totals:	76 (A)		328 (B)

Prevalence Index = B/A = 4.31

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
N 2 - Dominance Test is >50%
N 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: WTT-U

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
0-4	10YR 3/3	100	—					very gravelly loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Steep gravelled slope - pit not needed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks: Steep convex surface dominated by upland plants

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/6/21
Applicant/Owner: City of Willits State: CA Sampling Point: W2T1-U
Investigator(s): Kelsey McDonald, Rose Dano Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 15
Subregion (LRR): A Lat: 39.40242629 Long: -123.345835 Datum: WGS 84
Soil Map Unit Name: Cole Silty Clay Loam 0-1% slopes NWI classification: PSS / none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Ditch hydrologically connected to Baechtel Creek, primarily characterized by Salix lasiolepis, Cornus sericea, Rubus armeniacus, Runs parallel along west side of rail prism.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m rad.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	25	Y	FACW
2.			
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: 3m rad.)			
1. Rubus armeniacus	15	Y	FAC
2. Quercus kelloggii	1		FACU
3. Fraxinus latifolia	1		FACW
4. Toxicodendron diversilobum	2		FAC
5. Crataegus monogyna	1		FAC
Cornus glabrata	2/22	= Total Cover	FACW
Herb Stratum (Plot size: 1m²)			
1. Juncus patens	20	Y	FACW
2. Festuca arundinacea	8	Y	FAC
3. Rumex conglomeratus	1		FACW
4. Dipsacus fullonum	5		FAC
5. Hordeum marinum	<1		FAC
6. Mentha pulegium	<1		OBL
7. Festuca perennis	5		FAC
8. Phalaris aquatica	1		FACU
9.			
10.			
11.			
	42 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 60

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	49	x 2 =	98
FAC species	37	x 3 =	111
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	89 (A)		218 (B)

Prevalence Index = B/A = 2.45

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: W2T1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	5YR 3/2	100	—	—	—	—	very gravelly loam	Mixed sedimentary w/organics + trash
3-14	2.5Y 4/2	38	10YR 5/6	7	C	M	loam	Depleted matrix w/redox
3-14	5YR 3/2	60	—				very gravelly loam	Mixed sedimentary deposits

[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: Lots of mixing in dark reddish soil - high organic content, trash, and gravel - appears to be sedimentary deposit. Intermittent layer of depleted soil with redox occurs starting around 3 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 ✓ Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/6/21
Applicant/Owner: City of Willits State: CA Sampling Point: W2T1-U
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): convex Slope (%): 20
Subregion (LRR): A Lat: 39.40242629 Long: -123.345835 Datum: WGS84
Soil Map Unit Name: Cole Silty Clay Loam 0-1% slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Wetland ditch comes up to western side of rocked rail prism. Mostly unvegetated, with some invasive grasses.

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: 1m²)			
1. Bromus hordaceus	1		FACU
2. Festuca myuros	.2		FACU
3. Plantago lanceolata	.2		FACU
4. Avena barbata	.2		UPL
5. Cynosurus echinatus	.2		UPL
6. Bromus diandrus	.2		UPL
7.			
8.			
9.			
10.			
11.			
	2 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 98

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 0 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	1.4	x 4 =	5.6
UPL species	0.6	x 5 =	3
Column Totals:	2 (A)		8.6 (B)

Prevalence Index = B/A = 4.3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: W2T1-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
Surface rocked							cobbelly gravel	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks: Outsloped rail prism.

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/6/21
Applicant/Owner: City of Willits State: CA Sampling Point: W3T1-W
Investigator(s): Kelsey McDonald, Rose Danza Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 20
Subregion (LRR): A Lat: 39.40061214 Long: -123.3446326 Datum: WGS84
Soil Map Unit Name: Cole Silty Clay Loam 0-1% Slopes NWI classification: PSS / none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Wetland ditch flows north (visible drift deposits) passes to east through culvert under rail, then flows N. to Baechtel Creek.

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: 3m)			
1. Rubus armeniacus	20	Y	FAC
2. Baccharis pilularis	5		UPL
3. Fraxinus latifolia	1		FACW
4.			
5.			
	34 = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Mentha pulegium	20	Y	OBL
2. Epilobium densiflorum	1		FACW
3. Agrostis stolonifera	1		FAC
4. Rumex conglomeratus	5		FACW
5. Dipsacus fullonum	1		FAC
6. Polypogon monspeliensis	<1		FACW
7. Festuca perennis	<1		FAC
8.			
9.			
10.			
11.			
	28 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 72

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	20	x 1 =	20
FACW species	8	x 2 =	16
FAC species	31	x 3 =	93
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	64 (A)		154 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:
✓ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
✓ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ 5 - Wetland Non-Vascular Plants[1]
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: W3T1-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/2	95	7.5YR3/4	5	C	PL,M	gravelly loam	high organic content

[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: No clear horizons

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/6/21
Applicant/Owner: City of Willits State: CA Sampling Point: WJT1-U
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Berm Local relief (concave, convex, none): convex Slope (%): 70
Subregion (LRR): A Lat: 39.40061214 Long: -123.3446326 Datum: WGS84
Soil Map Unit Name: Cole Silty Clay Loam 0-1% slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Rocked rail prism with brush. Wetland ditches occur on both sides of rail prism, connect to Baechtel Creek. 4ft from Western ditch edge

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: 3m)			
1. Baccharis pilularis	30	Y	UPL
2. Rubus armeniacus	20	Y	FAC
3. Quercus lobata	1		FACU
4. Toxicodendron diversilobum	2		FAC
5.			
	53 = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Brica maxima	5	Y	UPL
2. Bromus diandrus	2	Y	UPL
3. Avena barbata	1		UPL
4. Daucus carota	1		FACU
5. Bromus hordaceus	1		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 90

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	22	x 3 =	66
FACU species	4	x 4 =	16
UPL species	38	x 5 =	190
Column Totals:	64 (A)		272 (B)

Prevalence Index = B/A = 4.25

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
N 2 - Dominance Test is >50%
N 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: WSTI-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
Surface							cobbelly gravel	rocked prism

[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: No pit – surface rocked outsloped berm.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks: Convex rocked rail prism

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: W4TI-W
Investigator(s): KdseyMcDonald, RoseDana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR): A Lat: 39.39887872 Long: -123.3433293 Datum: WGS84
Soil Map Unit Name: Cole Silty Clay Loam 0-1% Slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Low spot in trail with wetland plants & evidence of flooding in center. Surface cracks present, appears to be seasonally flooded.

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: 3m)			
1. Rubus armeniacus	20	Y	FAC
2. Cornus glabrata	10	Y	FACW
3. Quercus lobata	5		FACU
4. Toxicodendron diversilobum	2		FAC
5.			
	37 = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Festuca arundinacea	70	Y	FAC
2. Agrostis stolonifera	10		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 10

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 10	x 2 = 20
FAC species 82	x 3 = 246
FACU species 5	x 4 = 20
UPL species 0	x 5 = 0
Column Totals: 97 (A)	286 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
✓ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Passe's FAC-neutral

SOIL Rose E. Dana Sampling Point: W4T1-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	98	7.5YR 4/6	2	C	PL	Clay Loam	
2-12	10YR 2/2	92	7.5YR 4/6	8	C	PL+M	Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X 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)
- 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 ____ No X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes X No ____

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

Look up well data?

Remarks:

Likely seasonally flooded, two observing wells nearby

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: W4TI-U
Investigator(s): Kelsey McDonald, Rose Dane Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): convex Slope (%): 25
Subregion (LRR): A Lat: 39.39887872 Long: -123.3433293 Datum: WGS 84
Soil Map Unit Name: Cole Silty Clay Loam 0-1% Slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Upland pit near southern extent of Wetland 4, near Shell Street access

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: 1m²)			
1. Bromus hordeaceus	10	Y	FACU
2. Hordeum marinum	1		FAC
3. Plantago lanceolata	1		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	12 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 88

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	1	x 3 =	3
FACU species	11	x 4 =	44
UPL species	0	x 5 =	0
Column Totals:	12 (A)		47 (B)

Prevalence Index = B/A = 3.92

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
☑ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Rocked road prism

SOIL

Sampling Point: WHT1-U

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
0-4	10YR 3/2	100	–	–	–	–	very gravelly loam	
4+	Rocked Road Prism						angular rock	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: WST1-W
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): 10
Subregion (LRR): A Lat: 39.39729803 Long: -123.3425263 Datum: WGS 84
Soil Map Unit Name: Gielow Sandy Loam 0-5% slopes NWI classification: PSS/PEM/none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Wetland 5 appears to overflow to east through culvert/tunnel through rail and pool up on both sides of prism. Primarily emergent in center channel, with shrubs along edge.

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: 3m)			
1. Rubus armeniacus	4	Y	FAC
2. Baccharis pilularis	3	Y	UPL
3.			
4.			
5.			
	7 = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Mentha pulegium	20	Y	OBL
2. Rumex crispus	5		FAC
3. Carex gracilior	1		NR
4. Juncus patens	1		FACW
5. Phalaris aquatica	2		FACU
6. Kickxia elatine	1		FAC
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 70

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	1	x 2 =	2
FAC species	10	x 3 =	30
FACU species	11	x 4 =	44
UPL species	3	x 5 =	15
Column Totals:	45 (A)		111 (B)

Prevalence Index = B/A = 2.47

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
✓ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: WST1-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	85	7.5YR 3/4	15	C	M,PL	gravelly loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: Appears to flow seasonally

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: WST1-U
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): convex Slope (%): 10
Subregion (LRR): A Lat: 39.39729803 Long: -123.3425263 Datum: WGS84
Soil Map Unit Name: Gielow Sandy Loam 0-5% Slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Upland pit along rail prism ~ 2ft above wetland bottom (vertically), 3ft from wetland edge.

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: 3m)			
1. Rubus armeniacus	20	Y	FAC
2. Toxicodendron diversilobum	5		FACU
3. Baccharis pilularis	3		UPL
4.			
5.			
	28 = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Phalaris aquatica	35	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 45

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 20	x 3 = 6
FACU species 40	x 4 = 160
UPL species 3	x 5 = 15
Column Totals: 63 (A)	235 (B)

Prevalence Index = B/A = 3.73

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
✓ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: WST1-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100	—	—	—	—	gravelly loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

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

Project/Site: Willits Rail Trail | City/County: Mendocino | Sampling Date: 7/6/21
Applicant/Owner: City of Willits | State: CA | Sampling Point: UpTI-W
Investigator(s): Kelsey McDonald, Rose Dana | Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): Concave | Slope (%): 2-5
Subregion (LRR): A | Lat: 39.39504183 | Long: -123.3408481 | Datum: WGS84
Soil Map Unit Name: Gielow Sandy Loam 0-5% slopes | NWI classification: PEMA / none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Trail/Dirt road, appears to be seasonally flooded, east of rail

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: 3m² rad.)			
1. Rubus armeniacus	5	Y	FAC
2. Quercus kelloggii	1		FACU
3.			
4.			
5.			
	6 = Total Cover		
Herb Stratum (Plot size: 1 m²)			
1. Festuca arundinacea	30	Y	FAC
2. Lotus corniculatus	1		FAC
3. Epilobium densiflorum	1		FACW
4. Briza minor	<1		FAC
5. Arrhenatherum elatius	1		UPL
6. Mentha pulegium	1		OBL
7. Cichorium intybus	2		FACU
8. Juncus occidentalis	3		FACW
9. Sisyrinchium bellum	<1		FACW
10.			
11.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60

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	1	x 1 =	1
FACW species	5	x 2 =	10
FAC species	37	x 3 =	111
FACU species	10	x 4 =	40
UPL species	3	x 5 =	15
Column Totals:	56 (A)		177 (B)

Prevalence Index = B/A = 3.16

Hydrophytic Vegetation Indicators:
✓ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL Rose E. Dana

Sampling Point: WGTL-W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	97	7.5YR 4/6	3	C	PL	Gravelly loam	
4-12	10YR 3/2	90	7.5YR 4/6	10	C	PL/M	Gravelly loam compacted gravel mixed in	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

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: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: WGT1-U
Investigator(s): Chelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): Convex Slope (%): 35
Subregion (LRR): A Lat: 39.39504183 Long: -123.3408481 Datum: WGS84
Soil Map Unit Name: Gielow Sandy Loam 0-5% slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Rail prism next to emergent wetland #6

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: 3m²)			
1. Quercus lobata	25	Y	FACU
2.			
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Dipsacus fullonum	1		FAC
2. Arrhenatherum elatius	90	Y	UPL
3. Cynosurus echinatus	1		UPL
4. Convolvulus arvensis	<1		UPL
5. Lactuca serriola	1		FACU
6. Vicia sativa	<1		UPL
7.			
8.			
9.			
10.			
11.			
	94 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 6

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	1	x 3 = 3
FACU species	26	x 4 = 104
UPL species	92	x 5 = 460
Column Totals:	119 (A)	567 (B)

Prevalence Index = B/A = 4.76

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL ROSE E. DANA Sampling Point: WGT1-U

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
0-14	10YR 3/2	100					SANDY LOAM	mixed gravel

[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 √ Depth (inches): _____

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

Saturation Present? (includes capillary fringe) Yes _____ No Y Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

slight upslope from wetland ditch. Compacted gravel. Very gravelly sandy loam.

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: WFT1-W
Investigator(s): Kasey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 10
Subregion (LRR): A Lat: 39.39544803 Long: -123.34132218 Datum: WGS 84
Soil Map Unit Name: Gielow Sandy Loam 0-5% Slopes NWI classification: PSS / none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. Rubus armeniacus	20	Y	FAC
2. Toxicodendron diversilobum	5		FAC
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Juncus patens	25	Y	FACW
2. Mentha pulegium	2		OBL
3. Juncus effusus	3		FACW
4. Rumex conglomeratus	3		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	33 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 65

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	2	x 1 =	2
FACW species	31	x 2 =	62
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	58 (A)		139 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
✓ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: WTHW

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
0-10	10YR 3/2	95	7.5YR 3/4	5	C	M	loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: Appears to flow seasonally and stagnate in low positions such as this. There is likely an ephemeral connection to Hachl Creek to north.

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: WTT1-U
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Berm Local relief (concave, convex, none): convex Slope (%): 35
Subregion (LRR): A Lat: 39.39544803 Long: -123.3413218 Datum: WGS84
Soil Map Unit Name: Gielow Sandy Loam 0-5% Slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 3m rad)			
1. Rubus armeniacus	25	Y	FAC
2. Toxicodendron diversilobum	20	Y	FACU
3.			
4.			
5.			
	45 = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Juncus effusus	2		FACW
2. Chlorogalum pomeridianum	2		UPL
3. Plantago lanceolata	1		FAC
4. Hypericum perforatum	1		FACU
5. Bromus hordaceus	5	Y	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	11 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	29	x 4 =	116
UPL species	2	x 5 =	10
Column Totals:	51 (A)		186 (B)

Prevalence Index = B/A = 3.65

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
N 2 - Dominance Test is >50%
N 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: WFT1-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
Surface	- Rocked	Rail	Prism				Cobbelly gravel	

[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: Rocked prism - no pit needed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/2021
Applicant/Owner: City of Willits State: CA Sampling Point: WETLW
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 39.392254 Long: -123.339027 Datum: WGS84
Soil Map Unit Name: Gielow Sandy Loam 0-5% Slopes NWI classification: PEM / none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Seasonally flooded, vegetated access road.

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: 3m rad)			
1. Quercus lobata	1		FACU
2. Rubus armeniacus	1		FAC
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Agrostis stolonifera	50	Y	FAC
2. Festuca arundinacea	20	Y	FAC
3. Phalaris aquatica	1		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	71 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 23

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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	71	x 3 =	213
FACU species	8	x 4 =	32
UPL species	0	x 5 =	0
Column Totals:	79 (A)		245 (B)

Prevalence Index = B/A = 3.10

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

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

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: WETLW

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	98	7.5YR 3/4	2	C	PL/M	gravelly loam	
5-12	10YR 3/2	95	7.5YR 3/4	5	C	M	gravelly loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Marginally wet, compacted access road. Becomes much wetter to North.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: WET1-U
Investigator(s): Chelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): convex Slope (%): 15
Subregion (LRR): A Lat: 39.392254 Long: -123.339077 Datum: WGS84
Soil Map Unit Name: Gielow Sandy Loam 0-5% slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: 4ft from wetland edge on rail prism.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus lobata	25	Y	FACU
2.			
3.			
4.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 3m)			
1. Quercus lobata	1		FACU
2. Arbutus menziesii	1		
3.			
4.			
5.			
	2 = Total Cover		

Herb Stratum (Plot size: 1m²)			
1. Festuca myuros	10	Y	FACU
2. Bromus hordaceus	20	Y	FACU
3. Vicia sativa	1		UPL
4. Phalaris aquatica	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 65

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	61	x 4 =	244
UPL species	1	x 5 =	5
Column Totals:	62 (A)		249 (B)

Prevalence Index = B/A = 4.01

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
NJ 2 - Dominance Test is >50%
NJ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: WETL-U

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
Surface rocked							Cobelly gravel	

[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:

No soil pit- rocked surface

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

DATA Sheet 001

OHWM Delineation Cover Sheet Page 1 of 1

Project: Willits Rail Trail **Date:** 7/6/2021

Location: Broaddus Creek **Investigator(s):** ROSE E. DANA

Project Description:

Trail near Railroad

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Stagnent pools, some algae, Juvenile Steelhead present, young of the year, maybe 1 or 2 24 fish, ~20°C, pool-riffle system, cobble substrate, bridge in stream shows OHWM AS WHITE LINE.

Off-site Information

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:

OHWM marked in field w/ GPS, mapped in Appendix A figure 3

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

/

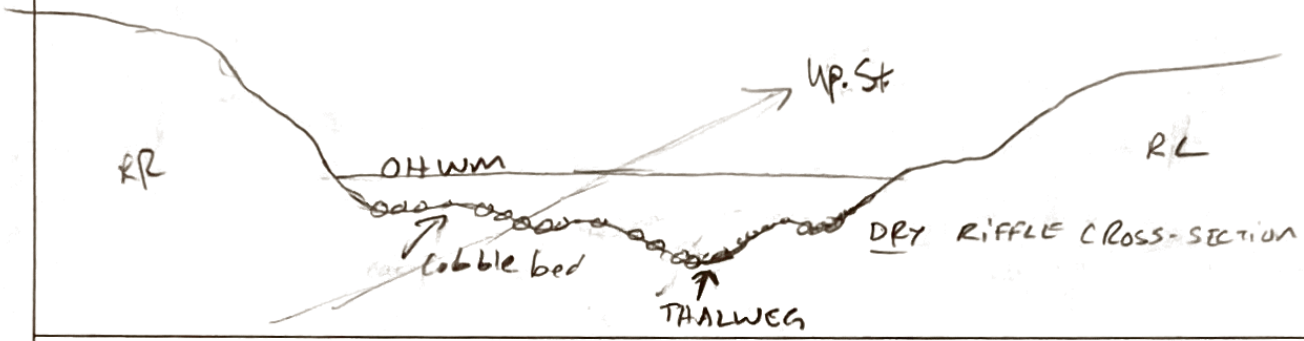
List and describe any other supporting information received/acquired:

Watermarks on rocks & bridge

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.

Datasheet # 001 **OHWM Delineation Datasheet** Page 1 of 2

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:

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	10	70	15	5	0	
Below OHWM	1	12	17	70	0	

Notes/Description:
Above OHWM: Sandy loam
Below OHWM: COBBLE BED, SOMEWHAT SORTED SUBSTRATE

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	5	45	5	40
Below OHWM	0	3	1	96

Notes/Description:
Some Agrostis stolonifera growing in the bed of stream w/ Rubus armeniacus below OHWM, Above OHWM Robinia pseudoacacia, Populus trichocarpa, Salix lasiolepis, Alnus rubra, Symphoricarpos albus, Agrostis stolonifera.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

Bridge has white water stains on wooden supports.

Data Sheet 002

OHWM Delineation Cover Sheet Page 1 of 2

Project: Willits Rail Trail **Date:** 7/6/2021

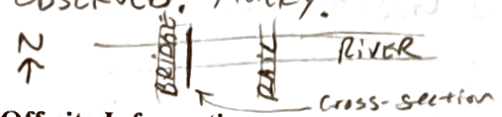
Location: Baechtel Creek **Investigator(s):** Rose E. Dana

Project Description:

Trail near railroad

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Seasonal, intermittent, crosssection between two bridges (one road, one rail), impacted, stagnent pools, seasonally fish bearing, no fish observed, mucky.



Off-site Information

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:

OHWM marked in field, mapped in Appendix A Figure 3-1 to 3-3

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

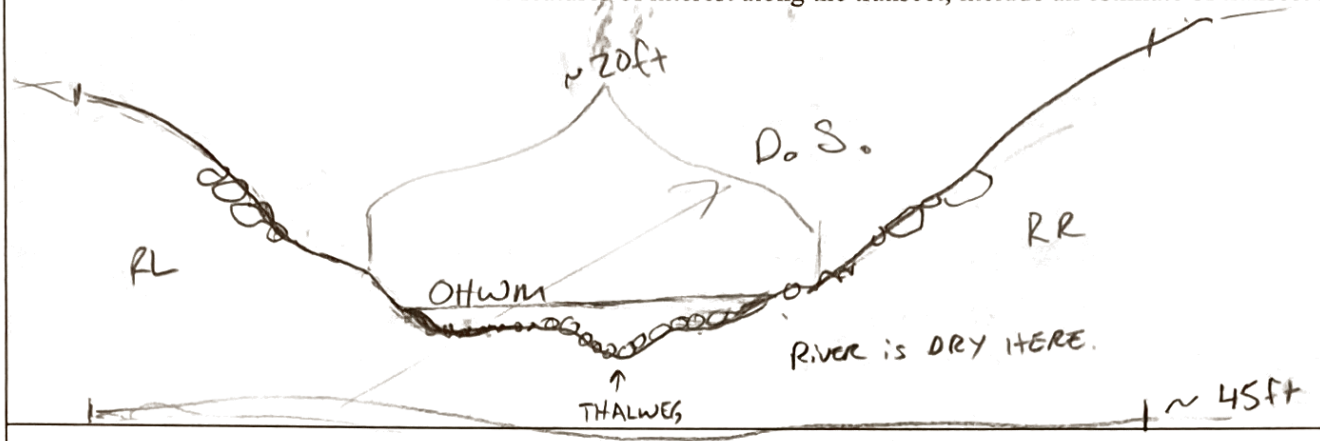
List and describe any other supporting information received/acquired:

Water marks on rocks & bridge

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.

Datasheet # 002 **OHWM Delineation Datasheet** Page 1 of 1

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:

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	20	20	30	10	20	
Below OHWM	7	23	20	30	20	

Notes/Description:
ABOVE OHWM: BOULDERY, COMPACTED, COVERED IN SANDY LOAM
BELOW OHWM: BOULDERY, SOMEWHAT SORTED GRAVEL, LITTLE FINES

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	2	23	5	65
Below OHWM	0	1	1	98

Notes/Description:
ABOVE OHWM: FRAXINUS LATIFOLIA, SALIX LASIOLEPIS, JUGLANS HINDSII SAPLING, RUBUS ARMENIACUS, AGROSTIS STOLONIFERA
BELOW OHWM: SALIX LASIOLEPIS, AGROSTIS STOLONIFERA

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

UNDERCUT BANKS & ROOT WADS, WATER STAINING ON BOULDERS, BRIDGES, & TREES, LACK OF VEGETATION BE[illegible] OHWM.

Datasheet003

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OHWM Delineation Cover Sheet

Project: Willits Rail Trail **Date:** 7/05/2021

Location: Haehl Creek, East side US of Bridge upstream **Investigator(s):** Rose E. Dana

Project Description:

Trail near railroad

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Stagnent pools, fish present, shady, large boulders on upstream edge gravel / fine riffle on downstream edge, steelhead present.

Off-site Information

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:

OHWM marked in field w/ GPS, mapped in Appendix A figure 3

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

/

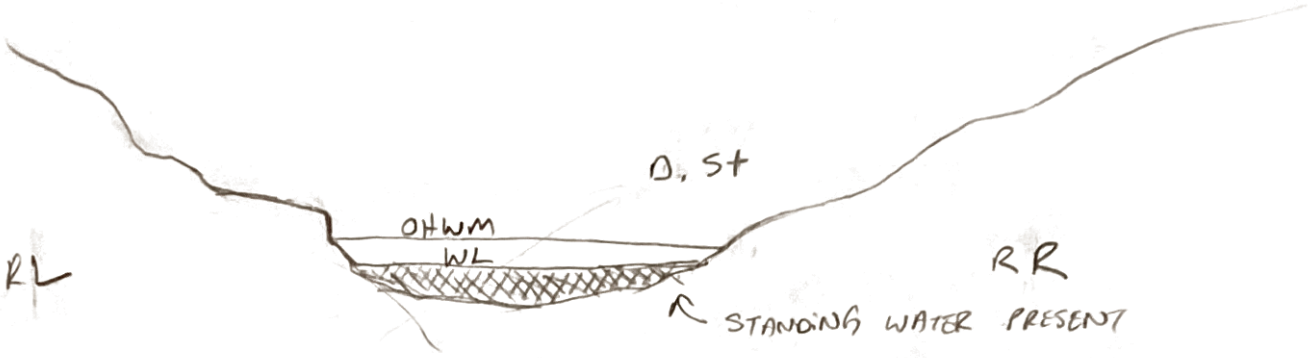
List and describe any other supporting information received/acquired:

Water marks on rocks & bridge

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.

Datasheet # 003 **OHWM Delineation Datasheet** Page 1 of 2

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:

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	5	10	3	2	80	
Below OHWM	3	12	3	2	80	

Notes/Description:

ABOVE OHWM - SANDY LOAM
BELOW OHWM - LOAMY SAND

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	10	25	5	60
Below OHWM	0	0	1	99

Notes/Description:

ABOVE OHWM: ALNUS RUBRA, SALIX LASIOLEPIS, RUBUS ARMENIACUS

BELOW OHWM: RUBUS ARMENIACUS

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

UNDERCUT BANKS & ROOTWADS, WATER STAINING ON ROCKS, BRIDGE, TREES
LACK OF VEGETATION BELOW OHWM

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/6/21
Applicant/Owner: City of Willits State: CA Sampling Point: Up1
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S18 T18N R13W
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5to
Subregion (LRR): A Lat: 39.40612301 Long: -123.348047 Datum: WGS 84
Soil Map Unit Name: Urban Land NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Ditch with compacted soil and some wetland-associated plants. No redox, no hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus lobata	25	Y	FACU
2.			
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: 3m rad)			
1. Quercus lobata	5	Y	FACU
2. Rubus armeniacus	3	Y	FAC
3. Toxicodendron diversilobum	1		FACU
4.			
5.			
	9 = Total Cover		
Herb Stratum (Plot size: 1m²)			
1. Juncus patens	20	Y	FACW
2. Festuca arundinacea	26	Y	FAC
3. Holcus lanatus	1		FAC
4. Agrostis stolonifera	1		FAC
5. Avena barbata	1		UPL
6. Vicia villosa	1		UPL
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	31	x 3 =	93
FACU species	31	x 4 =	124
UPL species	0	x 5 =	0
Column Totals:	82 (A)		257 (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: UP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	100%						Gravelly Loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Compacted gravel below, near old railroad

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 6/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: Wp-2
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): trail Local relief (concave, convex, none): concave Slope (%): 10
Subregion (LRR): A Lat: 39.39934004 Long: -123.3436562 Datum: WGS84
Soil Map Unit Name: Cole Silty Clay Loam 0-1% slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Compacted trail East of rail with some wetland plants, plot in low geomorphic position.

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: 3m)			
1. Rubus armeniacus	45	Y	FAC
2. Quercus lobata	1		FACU
3.			
4.			
5.			
	45 = Total Cover		
Herb Stratum (Plot size: 1m2)			
1. Agrostis stolonifera	15	Y	FAC
2. Festuca arundinacea	30	Y	FAC
3. Lotus corniculatus	1		FAC
4. Plantago lanceolata	1		FACU
5. Bromus hordaceus	<1		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	48 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 10

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	91	x 3 =	273
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	93 (A)		281 (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
N 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Dominants all Facultative.
*Near northern edge of WL1, which continues to Shellstreet

SOIL

Sampling Point: up-2

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
0-12	10YR 3/2	100	—				loam	dark soil, no redox

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks: Does not pass FAC-neutral

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

Project/Site: Willits Rail Trail City/County: Mendocino Sampling Date: 7/8/21
Applicant/Owner: City of Willits State: CA Sampling Point: Up-3
Investigator(s): Kelsey McDonald, Rose Dana Section, Township, Range: S19 T18N R13W
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): 15
Subregion (LRR): A Lat: 39.39593403 Long: -123.34116725 Datum: WGS84
Soil Map Unit Name: Gielow Sandy Loam 0-5% slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Point in center of ditch draining to Hachl Creek west of tracks

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus kelloggii	70	Y	UPL
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3m)			
1. Rubus armeniacus	75	Y	FAC
2. Toxicodendron diversilobum	10		FACU
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1m)			
1. none – thick Himalayan blackberry			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	10	x 4 =	40
UPL species	70	x 5 =	350
Column Totals:	155 (A)		615 (B)

Prevalence Index = B/A = 3.97

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
✓ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: UP3

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
0-12	10YR3/2	100	—	—	—	—	very cobbelly gravelly loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks: Appears to be well-drained with lots of gravel & cobbles.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks: Ditch does not appear to hold water for a sufficient amount of time at this location.

Appendix C

On-site Plant List

Appendix C – On-site Plant List

Scientific Name	Common Name	Status	Family	WMVC
Acer macrophyllum	Bigleaf maple	native	*Sapindaceae*	FACU
Acmispon americanus	American bird's foot trefoil	native	*Fabaceae*	FACU
Agrostis stolonifera	Redtop	invasive non-native	*Poaceae*	FAC
Alisma lanceolatum	Water plantain	non-native	*Alismataceae*	OBL
Allium triquetrum	White flowered onion	non-native	*Alliaceae*	UPL
Alnus rhombifolia	White alder	native	*Betulaceae*	FACW
Alnus rubra	Red alder	native	*Betulaceae*	FAC
Anthriscus caucalis	Bur chevril	non-native	*Apiaceae*	UPL
Apocynum cf. cannabinum	Indian hemp	native	*Apocynaceae*	FAC
Arbutus menziesii	Madrono	native	*Ericaceae*	UPL
Arctostaphylos manzanita	Common manzanita	native	*Ericaceae*	UPL
Arrhenatherum elatius	Tall oatgrass	non-native	*Poaceae*	UPL
Artemisia douglasiana	California mugwort	native	*Asteraceae*	FACW
Avena barbata	Slim oat	invasive non-native	*Poaceae*	UPL
Baccharis pilularis	Coyote brush	native	*Asteraceae*	UPL
Barbarea vulgaris	Yellow rocket	non-native	*Brassicaceae*	FAC
Beckmannia syzigachne	American sloughgrass	native	*Poaceae*	OBL
Brassica nigra	Black mustard	invasive non-native	*Brassicaceae*	UPL
Briza maxima	Rattlesnake grass	invasive non-native	*Poaceae*	UPL
Briza minor	Little rattlesnake grass	non-native	*Poaceae*	FAC
Bromus diandrus	Ripgut brome	invasive non-native	*Poaceae*	UPL
Bromus hordeaceus	Soft chess	invasive non-native	*Poaceae*	FACU
Buddleja davidii	Butterfly bush	invasive non-native	*Scrophulariaceae*	FACU
Calocedrus decurrens	Incense cedar	native	*Cupressaceae*	UPL
Carduus pycnocephalus	Italian thistle	invasive non-native	*Asteraceae*	UPL
Carex cusickii	Cusick's sedge	native	*Cyperaceae*	OBL
Carex gracilior	Slender sedge	native	*Cyperaceae*	Not rated
Carex nudata	Torrent sedge	native	*Cyperaceae*	OBL
Carex tumulicola	Split awn sedge	native	*Cyperaceae*	FACU
Celtis australis	European nettle tree	non-native	*Cannabaceae*	UPL

Scientific Name	Common Name	Status	Family	WMVC
Centaurea solstitialis	Yellow starthistle	invasive non-native	*Asteraceae*	UPL
Centaurium erythraea	European centaury	non-native	*Gentianaceae*	FAC
Cerastium glomeratum	Large mouse ears	non-native	*Caryophyllaceae*	FACU
Chlorogalum pomeridianum	Amole	native	*Agavaceae*	UPL
Cichorium intybus	Chicory	non-native	*Asteraceae*	FACU
Cirsium vulgare	Bullthistle	invasive non-native	*Asteraceae*	FACU
Claytonia perfoliata	Miner's lettuce	native	*Montiaceae*	FAC
Conium maculatum	Poison hemlock	invasive non-native	*Apiaceae*	FAC
Convolvulus arvensis	Field bindweed	non-native	*Convolvulaceae*	UPL
Cornus glabrata	Brown dogwood	native	*Cornaceae*	FACW
Cornus sericea	American dogwood	native	*Cornaceae*	FACW
Cotinus coggygria	Smoke tree	non-native	*Anacardiaceae*	UPL
Crassula tillaea	Mossy stonecrop	non-native	*Crassulaceae*	FAC
Crataegus monogyna	Hawthorn	invasive non-native	*Rosaceae*	FAC
Cynosurus echinatus	Dogtail grass	invasive non-native	*Poaceae*	UPL
Cyperus eragrostis	Tall-flatsedge	native	*Cyperaceae*	FACW
Cytisus scoparius	Scotch broom	invasive non-native	*Fabaceae*	UPL
Dactylis glomerata	Orchardgrass	invasive non-native	*Poaceae*	FACU
Danthonia californica	California oatgrass	native	*Poaceae*	FAC
Daucus carota	Carrot	non-native	*Apiaceae*	FACU
Dipsacus fullonum	Wild teasel	invasive non-native	*Dipsacaceae*	FAC
Eleocharis sp.			*Cyperaceae*	UNK
Elymus caput-medusae	Medusa head	invasive non-native	*Poaceae*	UPL
Elymus triticoides	Beardless wild rye	native	*Poaceae*	UPL
Epilobium brachycarpum	Willow herb	native	*Onagraceae*	FAC
Epilobium ciliatum	Slender willow herb	native	*Onagraceae*	FACW
Epilobium densiflorum	Willow herb	native	*Onagraceae*	FACW
Equisetum telmateia	Giant horsetail	native	*Equisetaceae*	FACW
Erodium botrys	Big heron bill	non-native	*Geraniaceae*	FACU
Erodium cicutarium	Coastal heron's bill	invasive non-native	*Geraniaceae*	UPL
Eschscholzia californica	California poppy	native	*Papaveraceae*	UPL

Scientific Name	Common Name	Status	Family	WMVC
Festuca arundinacea	Reed fescue	invasive non-native	*Poaceae*	UPL
Festuca bromoides	Brome fescue	non-native	*Poaceae*	UPL
Festuca myuros	Rat's tail fescue	Invasive non-native	*Poaceae*	FACU
Festuca perennis	Italian rye grass	invasive non-native	*Poaceae*	FAC
Foeniculum vulgare	Fennel	invasive non-native	*Apiaceae*	UPL
Fraxinus latifolia	Oregon ash	native	*Oleaceae*	FACW
Galium aparine	Cleavers	native	*Rubiaceae*	FACU
Genista monspessulana	French broom	invasive non-native	*Fabaceae*	UPL
Geranium dissectum	Wild geranium	invasive non-native	*Geraniaceae*	UPL
Hedera helix	English ivy	invasive non-native	*Araliaceae*	FACU
Heracleum maximum	Common cowparsnip	native	*Apiaceae*	FAC
Heteromeles arbutifolia	Toyon	native	*Rosaceae*	UPL
Hirschfeldia incana	Mustard	invasive non-native	*Brassicaceae*	UPL
Holcus lanatus	Common velvetgrass	Invasive non-native	*Poaceae*	FAC
Hordeum murinum	Foxtail barley	invasive non-native	*Poaceae*	FAC
Hyacinthoides sp.			*Asparagaceae*	UPL
Hypericum perforatum	Klamathweed	invasive non-native	*Ericaceae*	FACU
Juglans hindsii	Northern california black walnut	rare, native	*Juglandaceae*	UPL
Juncus bufonius	Common toad rush	native	*Juncaceae*	FACW
Juncus effusus	Soft rush	native	*Juncaceae*	FACW
Juncus occidentalis	Slender juncus	native	*Juncaceae*	FACW
Juncus patens	Common rush	native	*Juncaceae*	FACW
Juncus xiphioides	Iris leaved rush	native	*Juncaceae*	OBL
Kickxia elatine	Sharp point fluellin	non-native	*Plantaginaceae*	FAC
Lactuca serriola	Prickly lettuce	non-native	*Asteraceae*	FACU
Lamium purpureum	Purple dead nettle	non-native	*Lamiaceae*	UPL
Lathyrus latifolius	Sweet pea	non-native	*Fabaceae*	UPL
Lotus corniculatus	Bird's foot trefoil	non-native	*Fabaceae*	FAC
Lupinus bicolor	Lupine	native	*Fabaceae*	UPL
Lysimachia arvensis	Scarlet pimpernel	non-native	*Myrsinaceae*	FAC
Madia gracilis	Gumweed	native	*Asteraceae*	UPL

Scientific Name	Common Name	Status	Family	WMVC
Malus pumila	Paradise apple	non-native	*Rosaceae*	UPL
Marah fabacea	California man-root	native	*Cucurbitaceae*	UPL
Medicago polymorpha	California burclover	invasive non-native	*Fabaceae*	FACU
Melissa officinalis	Lemon balm	non-native	*Lamiaceae*	FACU
Mentha pulegium	Pennyroyal	invasive non-native	*Lamiaceae*	OBL
Mentha spicata	Spearmint	non-native	*Lamiaceae*	FACW
Navarretia squarrosa	Skunkweed	native	*Polemoniaceae*	FACU
Pentagramma triangularis	Gold back fern	native	*Pteridaceae*	UPL
Phalaris aquatica	Harding grass	invasive non-native	*Poaceae*	FACU
Philadelphus sp.	Wild mock orange	native	*Hydrangeaceae*	UPL
Physocarpus capitatus	Ninebark	native	*Rosaceae*	FACW
Picea sitchensis	Sitka spruce	native	*Pinaceae*	FAC
Plantago erecta	California plantain	native	*Plantaginaceae*	UPL
Plantago lanceolata	Ribwort	invasive non-native	*Plantaginaceae*	FACU
Pleuropogon hooverianus	North coast semaphore grass	native, rare	*Poaceae*	FACW
Poa pratensis	Kentucky blue grass	invasive non-native	*Poaceae*	FAC
Polycarpon tetraphyllum	Four leaved allseed	non-native	*Caryophyllaceae*	UPL
Polygonum aviculare	Prostrate knotweed	non-native	*Polygonaceae*	FAC
Polypogon monspeliensis	Annual beard grass	invasive non-native	*Poaceae*	FACW
Polystichum munitum	Western sword fern	native	*Dryopteridaceae*	FACU
Populus fremontii ssp. fremontii	Fremont cottonwood	native	*Salicaceae*	FAC
Populus trichocarpa	Black cottonwood	native	*Salicaceae*	FAC
Prunella vulgaris	Self heal	native	*Lamiaceae*	FACU
Prunus cerasifera	Cherry plum	invasive non-native	*Rosaceae*	UPL
Prunus subcordata	Sierra plum	native	*Rosaceae*	UPL
Pseudognaphalium beneolens	Cudweed	native	*Asteraceae*	UPL
Pseudotsuga menziesii	Douglas fir	native	*Pinaceae*	FACU
Quercus kelloggii	California black oak	native	*Fagaceae*	UPL
Quercus lobata	Valley oak	native	*Fagaceae*	FACU
Ramalina menziesii	Lace lichen	native	*Ramalinaceae*	UPL
Raphanus sativus	Jointed charlock	invasive non-native	*Brassicaceae*	UPL

Scientific Name	Common Name	Status	Family	WMVC
Robinia pseudoacacia	Black locust	invasive non-native	*Fabaceae*	FACU
Rosa pisocarpa	Cluster rose	native	*Rosaceae*	FAC
Rosa rubiginosa	Sweet brier	non-native	*Rosaceae*	UPL
Rubus armeniacus	Himalayan blackberry	invasive non-native	*Rosaceae*	FAC
Rubus laciniatus	Cut leaved blackberry	non-native	*Rosaceae*	FACU
Rumex conglomeratus	Green dock	non-native	*Polygonaceae*	FACW
Rumex crispus	Curly dock	invasive non-native	*Polygonaceae*	FAC
Salix alba	White willow	non-native	*Salicaceae*	FACW
Salix babylonica	Weeping willow	non-native	*Salicaceae*	FACW
Salix lasiandra	Pacific willow	native	*Salicaceae*	FACW
Salix lasiolepis	Arroyo willow	native	*Salicaceae*	FACW
Sambucus nigra	Black elderberry	native	*Adoxaceae*	FAC
Sambucus nigra	Black elderberry	native	*Adoxaceae*	FAC
Senecio vulgaris	Common groundsel	non-native	*Asteraceae*	FACU
Sequoia sempervirens	Coast redwood	native	*Cupressaceae*	UPL
Sisyrinchium bellum	Blue eyed grass	native	*Iridaceae*	FACW
Sonchus asper	Spiny sowthistle	non-native	*Asteraceae*	FACU
Spergularia rubra	Purple sand spurry	non-native	*Caryophyllaceae*	FAC
Symphoricarpos albus	Common snowberry	native	*Caprifoliaceae*	FACU
Taraxia ovata	Sun cups	native	*Onagraceae*	UPL
Tellima grandiflora	Fringe cups	native	*Saxifragaceae*	FACU
Toxicodendron diversilobum	Poison oak	native	*Anacardiaceae*	FAC
Tragopogon porrifolius	Salsify	non-native	*Asteraceae*	UPL
Tribulus terrestris	Puncture vine	invasive non-native	*Zygophyllaceae*	UPL
Trifolium microcephalum	Small head clover	native	*Fabaceae*	FAC
Trifolium subterraneum	Subterranean clover	non-native	*Fabaceae*	UPL
Typha latifolia	Broadleaf cattail	native	*Typhaceae*	OBL
Ulmus americana	American elm	non-native	*Ulmaceae*	FAC
Umbellularia californica	California bay	native	*Lauraceae*	FAC
Verbascum thapsus	Woolly mullein	invasive non-native	*Scrophulariaceae*	FACU
Veronica americana	American brooklime	native	*Plantaginaceae*	OBL
Vicia sativa	Spring vetch	non-native	*Fabaceae*	UPL
Vicia villosa	Hairy vetch	non-native	*Fabaceae*	UPL

Scientific Name	Common Name	Status	Family	WMVC
Vinca major	Vinca	invasive non-native	*Apocynaceae*	UPL
Wyethia angustifolia	Narrow leaved mule ears	native	*Asteraceae*	FACU

Appendix D

Site Photographs



Photo 1. Wetland 2 is in the ditch adjacent to the trail that runs along the west side of the railroad.



Photo 2. In some areas, Wetland 2 is classified according to the Cowardin classification system as a Palustrine Scrub-Shrub wetland (PSS).



Photo 3. Soil present in the photo is from the soil pit in Wetland 2, the lower horizon (3-14 inches) had a matrix of mixed with loam and very gravelly loam, where 33% was loam with a color of 2.5Y 4/2 containing 7% of 10YR 5/6 redoximorphic features, and 60% was very gravelly loam with a color of 5YR 3/2. The soil above is an example of the loam with a color of 2.5Y 4/2 containing 7% of 10YR 5/6 redoximorphic features.



Photo 4. Soil present in the photo is from the soil pit in Wetland 2, the lower horizon (3-14 inches) had a matrix of mixed with loam and very gravelly loam, where 33% was loam with a color of 2.5Y 4/2 containing 7% of 10YR 5/6 redoximorphic features, and 60% was very gravelly loam with a color of 5YR 3/2. The soil above is an example of the very gravelly loam with a color of 5YR 3/2.



Photo 5. Wetland 3 is classified according as Palustrine Scrub-Shrub wetland (PSS).



Photo 6. Wetland 4 is classified as a Palustrine Emergent (PEM) in the center with Palustrine Scrub-Shrub wetland (PSS) along the edges.



Photo 7. Wetland 4 is classified as a Palustrine Emergent (PEM) in the center with Palustrine Scrub-Shrub wetland (PSS) along the edges.



Photo 8. Wetland 4 appeared to have a trail through the wetland and several monitoring wells scattered throughout. Surface cracks were visible in the trail.



Photo 9. Wetland 6 is classified according to the Cowardian classification system as Palustrine Emergent (PEM).



Photo 10. Wetland 7 is classified according to the Cowardian classification system as Palustrine Scrub-Shrub wetland (PSS).



Photo 11. A trail running through Wetland 7 that likely hydrologically feeds to Haehl Creek.



Photo 12. A patch of Palustrine Emergent (PEM) within Wetland 7.



Photo 13. Wetland 8 is classified according to the Cowardian classification system as Palustrine Emergent (PEM) and is surrounded by the Valley Oak Sensitive Natural Community (See Botanical Memorandum, GHD 2021).



Photo 14. Broaddus Creek passes under a bridge beneath the railroad within the PSB.

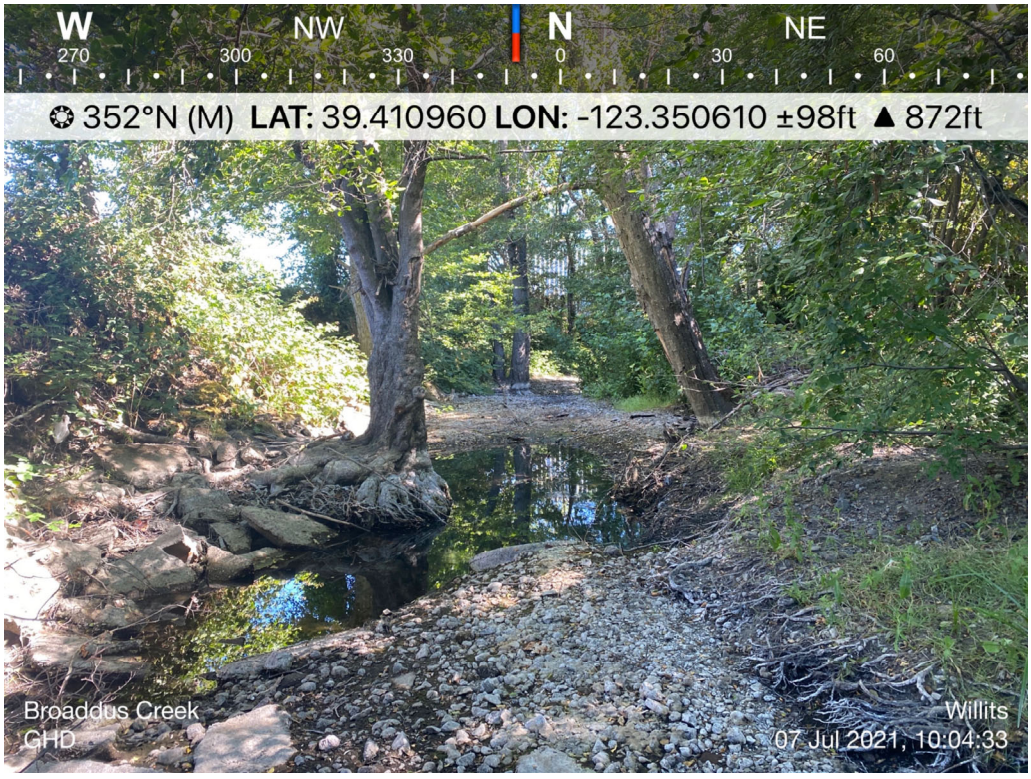


Photo 15. Broaddus Creek was intermittent with standing pools of water.



Photo 16. Broaddus Creek is a tributary to Davis Creek, tributary to Outlet Creek, tributary to the Eel River,



Photo 17. The seasonal Baechtel Creek is classified as Riverine Upper Perennial Stream Bed with cobble-gravel (R3SB3).



Photo 18. A bridge with the railroad passes over Baechtel Creek within the PSB.



Photo 19. Part of the riparian zone of Baechtel Creek within the PSB.



Photo 20. Haehl Creek near the bridge that crosses over.

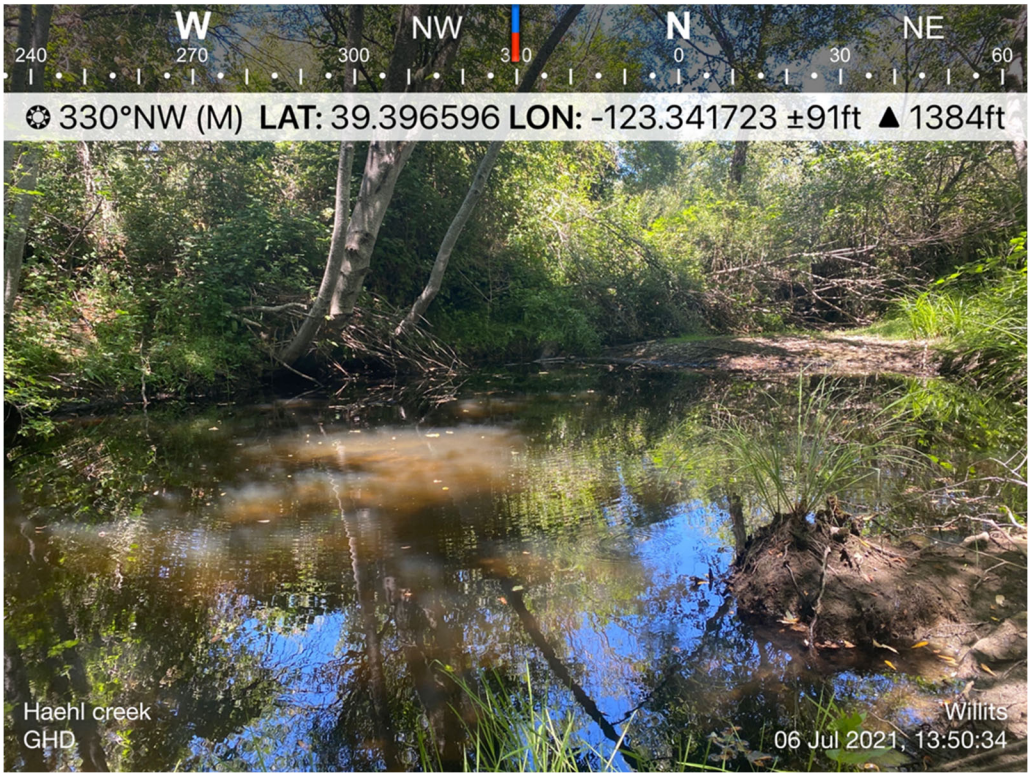


Photo 21. The large pool east of the railroad bridge on Haehl Creek.

Appendix E

NRCS Custom Soil Resources Report

United States Department of Agriculture

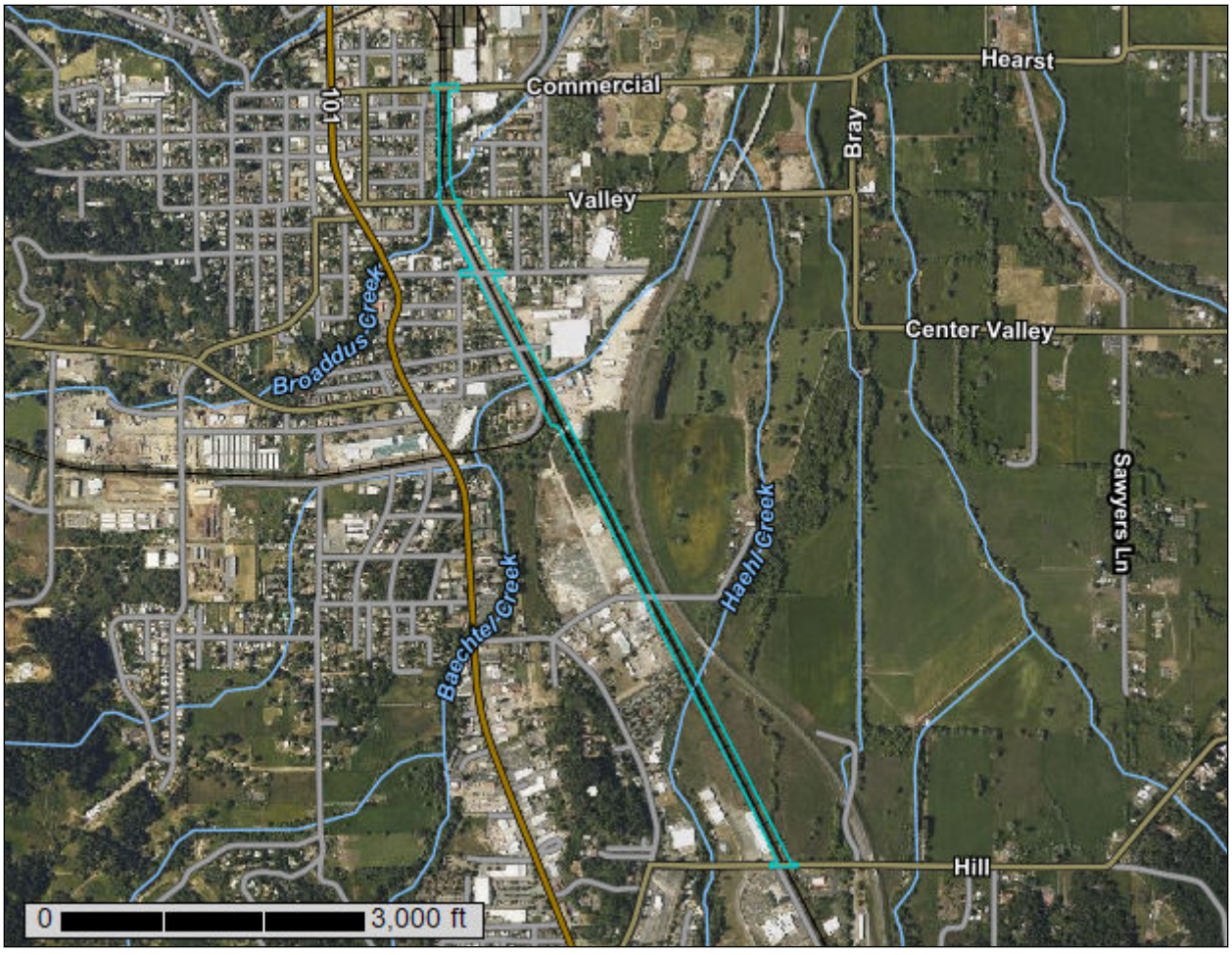
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mendocino County, Eastern Part and Southwestern Part of Trinity County, California

Willits Rail Trail



September 16, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mendocino County, Eastern Part and Southwestern Part of Trinity County, California
Survey Area Data: Version 15, Jun 1, 2020

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

Date(s) aerial images were photographed: May 5, 2019—Jun 3, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
115	Cole silty clay loam, 0 to 1 percent slopes, MLRA 14	5.4	22.7%
123	Feliz loam, 0 to 2 percent slopes	0.2	0.7%
128	Gielow sandy loam, 0 to 5 percent slopes	6.8	28.8%
210	Urban land	11.3	47.8%
Totals for Area of Interest		**23.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mendocino County, Eastern Part and Southwestern Part of Trinity County, California

115—Cole silty clay loam, 0 to 1 percent slopes, MLRA 14

Map Unit Setting

National map unit symbol: 2xc90
Elevation: 120 to 1,730 feet
Mean annual precipitation: 37 to 58 inches
Mean annual air temperature: 55 to 60 degrees F
Frost-free period: 203 to 313 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

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

Description of Cole

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 8 inches: silty clay loam
Bt1 - 8 to 15 inches: silty clay loam
Bt2 - 15 to 27 inches: clay loam
Bt3 - 27 to 41 inches: loam
C - 41 to 60 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 12 to 48 inches
Frequency of flooding: NoneRare
Frequency of ponding: Occasional
Maximum salinity: Nonsaline (0.2 to 0.5 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Ecological site: R014XD100CA - Loamy Wet Bottomland (Annual Grass) - 1990
Hydric soil rating: No

Minor Components

Cole
Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Clear lake
Percent of map unit: 5 percent
Landform: Basin floors
Hydric soil rating: Yes

123—Feliz loam, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hgq7
Elevation: 400 to 1,500 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 54 to 59 degrees F
Frost-free period: 175 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Feliz and similar soils: 85 percent
Minor components: 14 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Feliz

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

Typical profile
H1 - 0 to 7 inches: loam
H2 - 7 to 26 inches: loam
H3 - 26 to 62 inches: loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Cole

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 3 percent
Landform: Depressions
Hydric soil rating: Yes

Pinnobie

Percent of map unit: 3 percent
Hydric soil rating: No

Pinole

Percent of map unit: 2 percent
Hydric soil rating: No

Talmage

Percent of map unit: 1 percent
Hydric soil rating: No

Russian, loam

Percent of map unit: 1 percent
Hydric soil rating: No

Xerofluvents

Percent of map unit: 1 percent
Hydric soil rating: No

128—Gielow sandy loam, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hgqd
Elevation: 500 to 1,750 feet
Mean annual precipitation: 44 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 175 to 250 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

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

Description of Gielow

Setting

Landform: Alluvial flats, flood plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread, flat
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 4 inches: sandy loam
H2 - 4 to 11 inches: loam
H3 - 11 to 60 inches: stratified sandy loam to sandy clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Cole

Percent of map unit: 3 percent
Hydric soil rating: No

Clear lake

Percent of map unit: 3 percent
Landform: Basin floors
Hydric soil rating: Yes

Feliz

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent
Hydric soil rating: No

Russian
Percent of map unit: 2 percent
Hydric soil rating: No

Talmage
Percent of map unit: 2 percent
Hydric soil rating: No

210—Urban land

Map Unit Setting
National map unit symbol: hgt1
Elevation: 500 to 1,400 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 150 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition
Urban land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Unnamed
Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Xerofluvents
Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: Yes

Talmage
Percent of map unit: 1 percent
Hydric soil rating: No

Cole
Percent of map unit: 1 percent
Hydric soil rating: No

Feliz
Percent of map unit: 1 percent
Hydric soil rating: No

Pinole
Percent of map unit: 1 percent
Hydric soil rating: No

Pinnobie

Percent of map unit: 1 percent
Hydric soil rating: No

Yokayo

Percent of map unit: 1 percent
Hydric soil rating: No

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Appendix F

Record of Climatological Observations and WETS Table

Climatological Data for UKIAH MUNICIPAL AP, CA - June 2021

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2021-06-01	104	60	82.0	42	32	0.00	M	M
2021-06-02	99	54	76.5	37	27	0.00	M	M
2021-06-03	99	60	79.5	40	30	0.00	M	M
2021-06-04	93	60	76.5	37	27	0.00	M	M
2021-06-05	92	56	74.0	34	24	0.00	M	M
2021-06-06	84	52	68.0	28	18	0.00	M	M
2021-06-07	75	50	62.5	23	13	0.00	M	M
2021-06-08	70	45	57.5	18	8	0.00	M	M
2021-06-09	70	45	57.5	18	8	0.00	M	M
2021-06-10	77	43	60.0	20	10	0.00	M	M
2021-06-11	78	49	63.5	24	14	T	M	M
2021-06-12	86	59	72.5	33	23	0.00	M	M
2021-06-13	84	60	72.0	32	22	0.00	M	M
2021-06-14	78	58	68.0	28	18	T	M	M
2021-06-15	83	50	66.5	27	17	0.00	M	M
2021-06-16	97	51	74.0	34	24	0.00	M	M
2021-06-17	104	55	79.5	40	30	0.00	M	M
2021-06-18	109	59	84.0	44	34	0.00	M	M
2021-06-19	105	60	82.5	43	33	0.00	M	M
2021-06-20	100	59	79.5	40	30	0.00	M	M
2021-06-21	88	54	71.0	31	21	0.00	M	M
2021-06-22	84	54	69.0	29	19	0.00	M	M
2021-06-23	86	54	70.0	30	20	0.00	M	M
2021-06-24	91	54	72.5	33	23	0.00	0.0	M
2021-06-25	98	56	77.0	37	27	0.00	M	M
2021-06-26	108	58	83.0	43	33	0.00	0.0	M
2021-06-27	104	60	82.0	42	32	0.00	0.0	M
2021-06-28	97	60	78.5	39	29	0.00	0.0	M
2021-06-29	98	63	80.5	41	31	0.00	0.0	M
2021-06-30	100	63	81.5	42	32	0.00	0.0	M
Average|Sum	91.4	55.4	73.4	1009	709	T	0.0	M

Climatological Data for UKIAH MUNICIPAL AP, CA - July 2021

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2021-07-01	97	58	77.5	38	28	0.00	M	M
2021-07-02	98	58	78.0	38	28	0.00	M	M
2021-07-03	98	55	76.5	37	27	0.00	M	M
2021-07-04	97	56	76.5	37	27	0.00	M	M
2021-07-05	98	55	76.5	37	27	0.00	M	M
2021-07-06	97	54	75.5	36	26	0.00	M	M
2021-07-07	101	53	77.0	37	27	0.00	M	M
2021-07-08	105	57	81.0	41	31	0.00	M	M
2021-07-09	108	60	84.0	44	34	0.00	M	M
2021-07-10	111	63	87.0	47	37	0.00	M	M
2021-07-11	109	61	85.0	45	35	0.00	M	M
2021-07-12	105	57	81.0	41	31	0.00	0.0	M
2021-07-13	98	56	77.0	37	27	0.00	M	M
2021-07-14	97	54	75.5	36	26	0.00	M	M
2021-07-15	93	54	73.5	34	24	0.00	M	M
2021-07-16	96	56	76.0	36	26	0.00	M	M
2021-07-17	99	60	79.5	40	30	0.00	M	M
2021-07-18	104	58	81.0	41	31	0.00	M	M
2021-07-19	101	63	82.0	42	32	0.00	M	M
2021-07-20	94	59	76.5	37	27	0.00	M	M
2021-07-21	95	58	76.5	37	27	0.00	M	M
2021-07-22	99	56	77.5	38	28	0.00	M	M
2021-07-23	104	58	81.0	41	31	0.00	M	M
2021-07-24	105	59	82.0	42	32	0.00	M	M
2021-07-25	103	58	80.5	41	31	0.00	M	M
2021-07-26	92	58	75.0	35	25	0.00	M	M
2021-07-27	94	61	77.5	38	28	0.00	M	M
2021-07-28	104	59	81.5	42	32	0.00	M	M
2021-07-29	106	66	86.0	46	36	0.00	M	M
2021-07-30	108	63	85.5	46	36	0.00	M	M
2021-07-31	98	56	77.0	37	27	0.00	M	M
Average|Sum	100.5	58.0	79.2	1224	914	0.00	0.0	M

WETS Table

WETS Station: UKIAH MUNICIPAL AP, CA								
Requested years: 1971 - 2021								
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	58.2	36.7	47.5	5.50	2.34	6.69	8	-
Feb	61.2	37.7	49.4	5.34	2.70	6.39	7	-
Mar	64.7	40.2	52.5	4.62	2.31	5.65	8	-
Apr	69.3	42.6	56.0	2.34	0.94	2.84	4	-
May	78.3	47.5	62.9	0.91	0.20	0.83	2	-
Jun	86.4	52.7	69.6	0.25	0.00	0.12	1	-
Jul	94.5	56.2	75.4	0.01	0.00	0.00	0	-
Aug	93.1	54.9	74.0	0.01	0.00	0.00	0	-
Sep	88.6	50.7	69.7	0.17	0.05	0.16	1	-
Oct	78.0	45.0	61.5	1.79	0.48	1.80	3	-
Nov	64.2	39.5	51.9	3.44	2.15	4.16	6	-
Dec	56.5	36.4	46.4	7.55	2.99	9.16	10	-
Annual:					24.52	38.24		
Average	74.4	45.0	59.7	-	-	-	-	-
Total	-	-	-	31.93			52	-

GROWING SEASON DATES			
Years with missing data:	24 deg = 30	28 deg = 31	32 deg = 31
Years with no occurrence:	24 deg = 11	28 deg = 0	32 deg = 0
Data years used:	24 deg = 21	28 deg = 20	32 deg = 20
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	No occurrence	2/4 to 12/6: 305 days	3/10 to 11/14: 249 days
70 percent *	No occurrence	1/28 to 12/14: 320 days	3/1 to 11/23: 267 days
* Percent chance of the growing season occurring between the Beginning and Ending dates.			

STATS TABLE - total precipitation (inches)													
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1949									M0.00	M0.23			0.23
1950													
1951													
1952													
1953													
1954						1.05	T	0.71	T	0.67	3.85	6.26	12.54
1955													
1956													
1957													
1958													
1959													
1960													
1961													

1962										7.07			7.07
1963													
1964													
1965													
1966													
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1999													
2000								M0.00	MT	M0.23	M3.39	M1.75	1.61	6.98
2001	5.61	8.72	3.23	1.05	T	0.52	0.00	0.00	0.21	0.68	8.55	10.22	38.79
2002	3.38	2.53	2.13	0.85	0.88	T	T	0.00	0.00	0.00	4.39	20.03	34.19
2003	3.49	1.95	3.82	8.55	0.63	0.00	0.01	T	0.18	0.10	3.93	12.36	35.02
2004	3.95	11.20	M1.20	0.52	0.06	0.02	0.00	0.00	0.13	3.74	1.83	10.79	33.44
2005	6.62	3.37	6.40	2.65	4.05	1.85	0.00	0.00	0.04	0.84	5.24	19.25	50.31
2006	6.97	4.56	11.15	7.63	0.40	0.02	0.00	MT	0.00	0.31	4.14	6.00	41.18
2007	0.45	8.51	0.51	2.11	0.60	0.00	0.12	T	0.06	2.18	0.70	6.65	21.89
2008	12.58	4.75	1.07	0.38	0.00	T	0.00	0.00	0.37	1.28	2.94	3.37	26.74
2009	0.74	8.65	3.18	0.47	2.49	T	0.00	0.00	0.01	2.90	2.08	3.33	23.85
2010	13.84	4.10	5.23	6.89	2.35	0.14	T	T	0.11	6.86	3.19	9.20	51.91

2011	2.03	4.48	11.66	0.71	1.63	1.81	0.01	T	0.01	3.59	2.68	0.43	29.04
2012	5.65	M1.73	9.47	1.35	0.23	0.05	0.00	T	0.00	2.08	7.84	12.78	41.18
2013	1.25	0.59	2.21	1.08	0.14	0.31	0.03	T	0.55	0.00	0.85	0.49	7.50
2014	0.57	8.60	6.09	1.37	T	0.00	T	0.01	0.68	1.60	4.07	12.10	35.09
2015	0.46	M4.72	0.56	1.93	0.40	0.03	0.13	0.01	0.74	0.07	2.30	9.84	21.19
2016	10.78	2.25	9.20	1.27	0.45	0.36	T	0.00	0.00	6.31	3.73	7.54	41.89
2017	14.92	12.25	3.55	3.74	0.01	0.04	0.00	T	0.03	0.21	5.22	0.15	40.12
2018	6.31	0.55	6.12	4.93	0.05	0.00	T	0.00	0.03	1.33	4.01	3.61	26.94
2019	8.53	15.94	6.28	0.59	3.35	0.00	0.00	0.07	0.31	0.05	1.58	5.96	42.66
2020	3.30	T	1.65	0.84	1.29	T	0.00	0.08	0.00	T	1.27	2.89	11.32
2021	3.97	2.69	2.37	0.29	T	T	0.00	0.00	0.06	M0.00			9.38

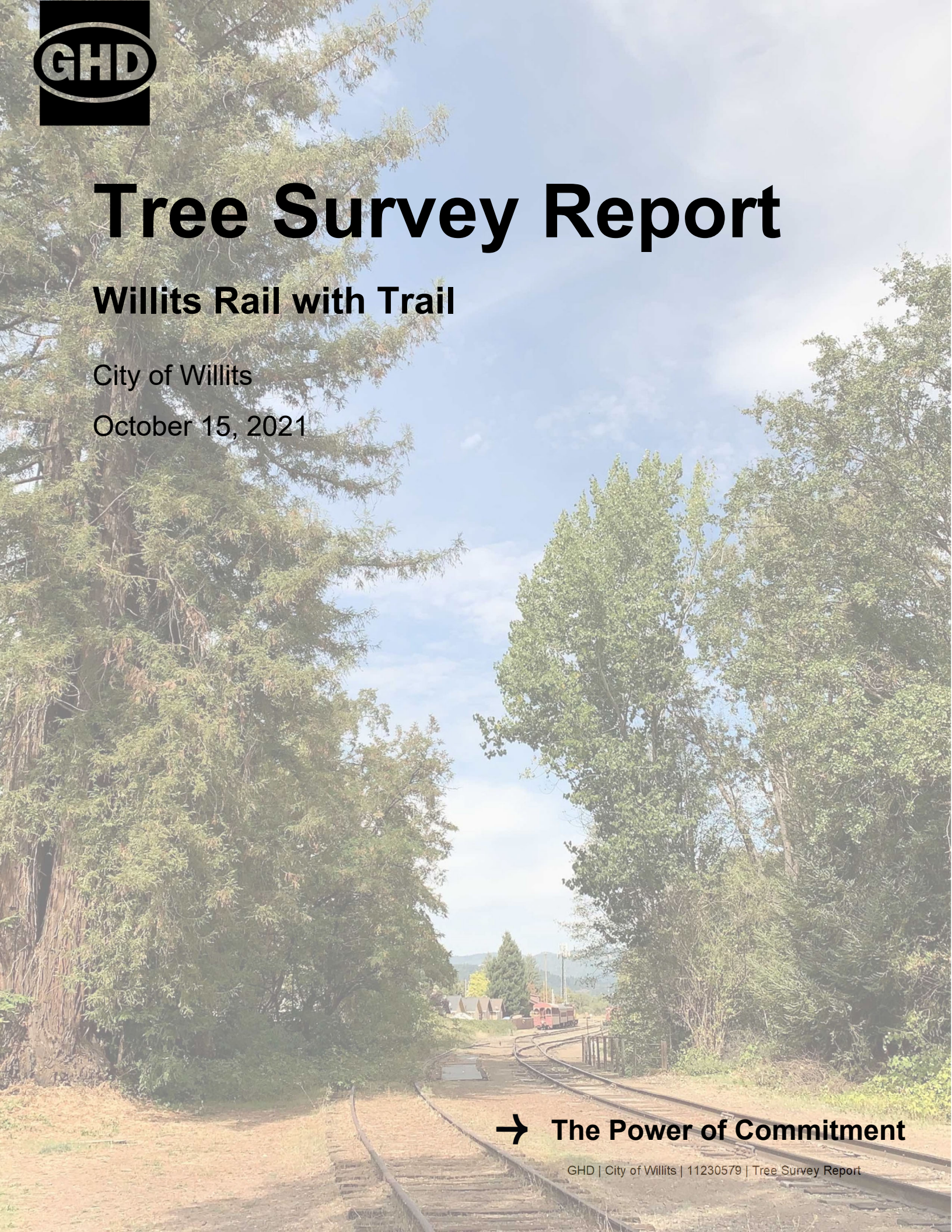
Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

Creation date: 2021-10-10

Appendix D

Tree Survey Inventory



Tree Survey Report

Willits Rail with Trail

City of Willits

October 15, 2021

The Power of Commitment

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Document status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S3		Kelsey McDonald					
S3	A		Rose E. Dana	Rose E. Dana			10/11/2021
S3			Misha Schwarz	Misha Schwarz			10/13/2021
S4					Andrea Hilton	Andrea Hilton	10/15/21
[Status code]							

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Tree Survey Report
Willits Rail with Trail

This document has been prepared for:

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October 15, 2021

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1. Summary

GHD prepared this tree survey report and accompanying appendices on behalf of the City of Willits (City), in support of the proposed Rail Trail Project (Project) (**Appendix A, Figures 1-2**). Tree surveys consisted of tagging trees within the Project Survey Boundary (PSB) with an aggregate diameter of at least 12 inches, and documenting the species, trunk diameter at breast height (DBH), canopy radius, structure, and health. GHD plant ecologists conducted tree surveys in the fall of 2021 (October 5th-6th). A total of 89 trees of 12 inches DBH or above were documented, including eight naturally occurring native tree species, four native tree species that appear to have been planted and might not be naturally occurring at this location, and four non-native species (see map in **Appendix A Figure 3**, and **Appendix B** Tree Survey Table). This report supports the Project's environmental documentation, permitting, and construction planning as deemed appropriate.

2. Introduction

Tree surveys were conducted to inventory trees with a DBH of at least 12 inches that have the potential to affect or be affected by the construction of the Project. The tree survey may help inform project design to avoid or minimize tree removal, or it may be used for public outreach. Tree surveys may also inform impact analysis and mitigation. The City does not have a tree ordinance, and surveys were completed voluntarily to inform project design and permitting. This report is subject to, and must be read in conjunction with, the limitations set out in Section 6 and the assumptions and qualifications contained throughout the report.

2.1 Project Description

The Project would construct an approximately 1.6-mile Class I bike trail (pedestrian and bicycle trail) from East Commercial Street to East Hill Road within the North Coast Railroad Authority (NCRA) right of way, within the City limits. Installation of this 1.6-mile trail would improve access and safety for pedestrian and bicycle users as well as create opportunities for nature study and recreation. The trail would provide a connection between the southern and the northern parts of the City, and it will be accessible to the residents that live and work in Willits. Furthermore, the trail would eventually provide linkages beyond the City into other parts of Mendocino County, the City of Ukiah, and beyond as part of the proposed Great Redwood Trail, which is planned to span between Eureka and the North Bay Area. It would also connect to the Haehl Creek Trail, located near the Frank R. Howard Memorial Hospital.

The trail would be a paved pathway Class I facility, alternating between an approximately ten-feet wide trail (five feet per travel lane) with two-foot shoulders. The trail may be narrowed in limited locations where unavoidable site constraints exist. The trail would be separated from the railroad and adjacent private property by a fence. The trail would be a minimum of ten feet from the railroad to meet NCRA design standards. The trail would include new bridge crossings over three creeks – Broaddus Creek, Baechtel Creek, and Haehl Creek.

It is assumed the railroad will remain active, with minimal levels of activity primarily associated with the Skunk Train excursion tours. The Project would not conflict with the Skunk Train excursion trails or other railroad use. Small areas of inactive track may be removed, primarily associated with grade crossings or inactive spurs. Existing street crossings may be enhanced with *California Manual on Uniform Traffic Control Devices* (CA MUTCD) standards, such as with LED signs. Signage and markings at public street crossings

would be updated as required by the California Public Utilities Commission (CPUC). Railroad crossings within city-street crossings would remain unaltered, except when providing connections to existing pedestrian facilities (including curb, gutter and sidewalk) located adjacent to the trail.

The Project would be designed in accordance with NCRA design standards and the Caltrans *Highway Design Manual, 7th Edition* (2020). In addition, the Project would be designed in accordance with other specific applicable standards, including the *California Manual on Uniform Traffic Control Devices* (CA MUTCD 2020) and the 2010 Americans with Disabilities Act Standards for Accessible Design.

2.2 Project Location

The Project is located along the railroad corridor between East Commercial Street to East Hill Road within the North Coast Railroad Authority right of way (**Appendix A, Figure 1**). Skunk Train Station is located at the northern end of the trail alignment. The railroad corridor is bordered by residential, industrial, and open space uses. Three creeks cross the trail alignment, and one small tributary originates near the rail. Riparian habitat, wetlands, and valley oak woodlands occur in the area. The PSB was defined by the rail corridor property boundaries between East Commercial Street and East Hill Road as shown in **Appendix A, Figure 2**.

3. Methods

GHD conducted the tree survey on October 5th and 6th, 2021, where 23.6 acres of the PSB were surveyed. On January 10th, 2022, 2.2 acres were added to the Project Boundary, but all additions are within the footprint of existing developed streets and contain no trees. The PSB was traversed on foot from north to south, starting at East Commercial Street and ending at East Hill Street. Trees within the rail corridor, based on digitized property boundary lines and physical markers such as fence lines, were visually assessed for trunk diameters of at least ~12 inches DBH. Trunk diameter was measured with a diameter tape at breast height (4.5” above the ground level, unless otherwise specified for trees with multiple trunks splitting at this level) and rounded to the nearest inch, or visually estimated at close range when impediments such as climbing poison oak vines prevented accurate measurement with a diameter tape. If multiple trunks were present, each trunk was measured and recorded. Trees were classified into broad categories of small, medium, and large diameter size classes as shown in **Table 1.**

Table 1. Tree diameter size class definitions.

Size Class	Diameter Range
Small	12 to 17 inches DBH
Medium	18 to 23 inches DBH
Large	≥ 24 inches DBH

Trees were identified to species based on nomenclature in *The Jepson Manual* (Baldwin et al. 2012). Trees were tagged at eye-level with aluminum nails and tags printed with a unique numeric identifier. The location of each tree inventoried was recorded in the field with an Eos Arrow 100 Submeter Global Positioning

System (GPS) Receiver with Global Navigation Satellite System (GNSS) and an iPad running ArcGIS Survey 123 in the WGS84 datum by collecting the location immediately adjacent to the trunk or standing near the tree and placing a point at the estimated location of the trunk centroid. Tree canopy radius was estimated in the field, and ratings for canopy structure and tree health were assigned. Canopy structure was rated from Poor to Good according to the following definitions in **Table 2,** and overall health was rated from Poor to Healthy as shown in **Table 3.**

Table 2. Canopy structure rating definitions.

Number	Structure Rating	Definition
1	Poor	Hazardous limbs or other major problems present
2	Poor-Fair	Moderate issues such as rotten limbs or leaning trunks present
3	Fair	Minor issues could be corrected with pruning
4	Fair-Good	Moderate canopy structure that may benefit from minor pruning
5	Good	Broad healthy canopy with no apparent hazards and no pruning needed

Table 3. Tree health rating definitions.

Number	Health Rating	Definition
0	Poor (in decline)	Tree appears to be dying and is not expected to survive in the long term
1	Poor	Significant damage is present, and survival of the tree is questionable in the long term
2	Poor-Fair	Moderate damage is present that has the potential to affect long-term health
3	Fair	Some non-lethal damage from pests, disease, or other stressors
4	Fair-Good	Very little damage from pests, disease, or other stressors
5	Good	No rot, significant pest damage or disease observed

4. Results

A total of 89 trees were documented and tagged within the PSB (**Table 4, Appendix B**). Notable naturally occurring large native trees within the PSB included eleven large valley oaks (*Quercus lobata*), a large California black oak (*Quercus kelloggii*), two large cottonwoods (*Populus fremontii* ssp. *fremontii*), and three large white alders (*Alnus rhombifolia*). The Broaddus Creek riparian corridor supported the highest concentration of medium and large white alders and the large cottonwoods within the PSB. Native riparian and oak trees are also clustered around Baechtel and Haehl Creek riparian corridors. Valley oak woodlands near the southern extent of the PSB supported most of the medium to large valley oaks rooted within the PSB. A large coast redwood (*Sequoia sempervirens*) and large incense cedar (*Calocedrus decurrens*) also

occur within the PSB near the East Valley Street intersection. Saplings and pole trees less than 12 inches DBH also occur throughout the PSB but were not inventoried.

Table 4. The number of each tree species inventoried within each size class (as defined in Table 1).

Species	Status	Size Classes	Number of Trees
Aleppo pine (*Pinus halepensis*)	Non-Native	Small	2
Arroyo willow (*Salix lasiolepis*)	Native, Riparian	Small	1
Black locust (*Robinia pseudoacacia*)	Non-Native	Small	4
		Medium	1
California black oak *(Quercus kelloggii*)	Native	Small	5
		Medium	1
		Large	1
Coast redwood (*Sequoia sempervirens*)	Native (Planted)	Medium	3
		Large	1
Cottonwood (*Populus fremontii* ssp. *fremontii*)	Native, Riparian	Large	2
Incense cedar (*Calocedrus decurrens*)	Native (Planted)	Large	1
Northern California black walnut (*Juglans hindsii*)	Native (Likely Planted)	Small	1
Oregon ash (*Fraxinus latifolia*)	Native	Small	4
		Medium	1
Paradise apple (*Malus pumila*)	Non-Native	Medium	1
Red alder (*Alnus rubra*)	Native, Riparian	Small	2
		Medium	1
Black elderberry (*Sambucus nigra*)	Native	Small	1
Sitka spruce (*Picea sitchensis*)	Native (Planted)	Small	1
Valley oak (*Quercus lobata*)	Native	Small	19
		Medium	7
		Large	11
Weeping willow (*Salix babylonica*)	Non-Native	Small	1
White alder (*Alnus rhombifolia*)	Native, Riparian	Small	10
		Medium	4
		Large	3
Total Number of Trees with DBH >12" within PSB			**89**

5. Conclusion

The Willits Rail Trail tree survey was conducted to provide information on the location, size, health, and native status of notable trees within the PSB. Trees of at least ~12 inches DBH intersecting the PSB were included in the inventory for consideration in project design, outreach to the public, and impact analysis based on the habitat, shade, and other ecosystem services that these trees provide. Although much of the rail corridor has low vegetative cover or is characterized by brushy vegetation, valley oak woodlands and riparian corridors with native tree canopies also intersect the PSB. It is recommended that native trees within the medium and large size classes are avoided to the greatest extent possible. Impacts to riparian areas and valley oak woodlands should also be minimized. Please see the Botanical Survey Technical Memorandum (GHD 2021a) and the Wetland Delineation Report (GHD 2021b) for the Valley Oak Woodland Sensitive Natural Community, riparian canopy, wetland boundaries. The majority of native oak trees inventoried were clustered around the eastern and western property boundaries, and may be avoided if the trail will be situated closer to the rail prism. Widening bridge crossings at Broaddus, Baechtel, and Haehl Creek may impact trees within these riparian areas. Spatial data collected for the tree inventory may be used both to inform Project design and evaluate potential impacts to trees after the design is complete.

6. Scope and limitations

This report: has been prepared by GHD for City of Willits and may only be used and relied on by City of Willits for the purpose agreed between GHD and City of Willits as set out in section 2.1 of this report.

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

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

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

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

7. References

Baldwin, B. D. 2012. The Jepson Manual, Second Edition. University of California Press. Berkeley, CA.

GHD 2021a. Willits Rail Trail Project Complete Botanical Surveys and Habitat Assessment. Technical Memorandum. Prepared for the City of Willits. October 2021. Eureka, California.

GHD 2021b. Aquatic Resources Delineation Report—Willits Rail with Trail. Report. Prepared for the City of Willits. October, 2021. Eureka, California.

8. Report Preparers

8.1 Client

City of Willits
111 E. Commercial Street
Willits, CA 95490 USA

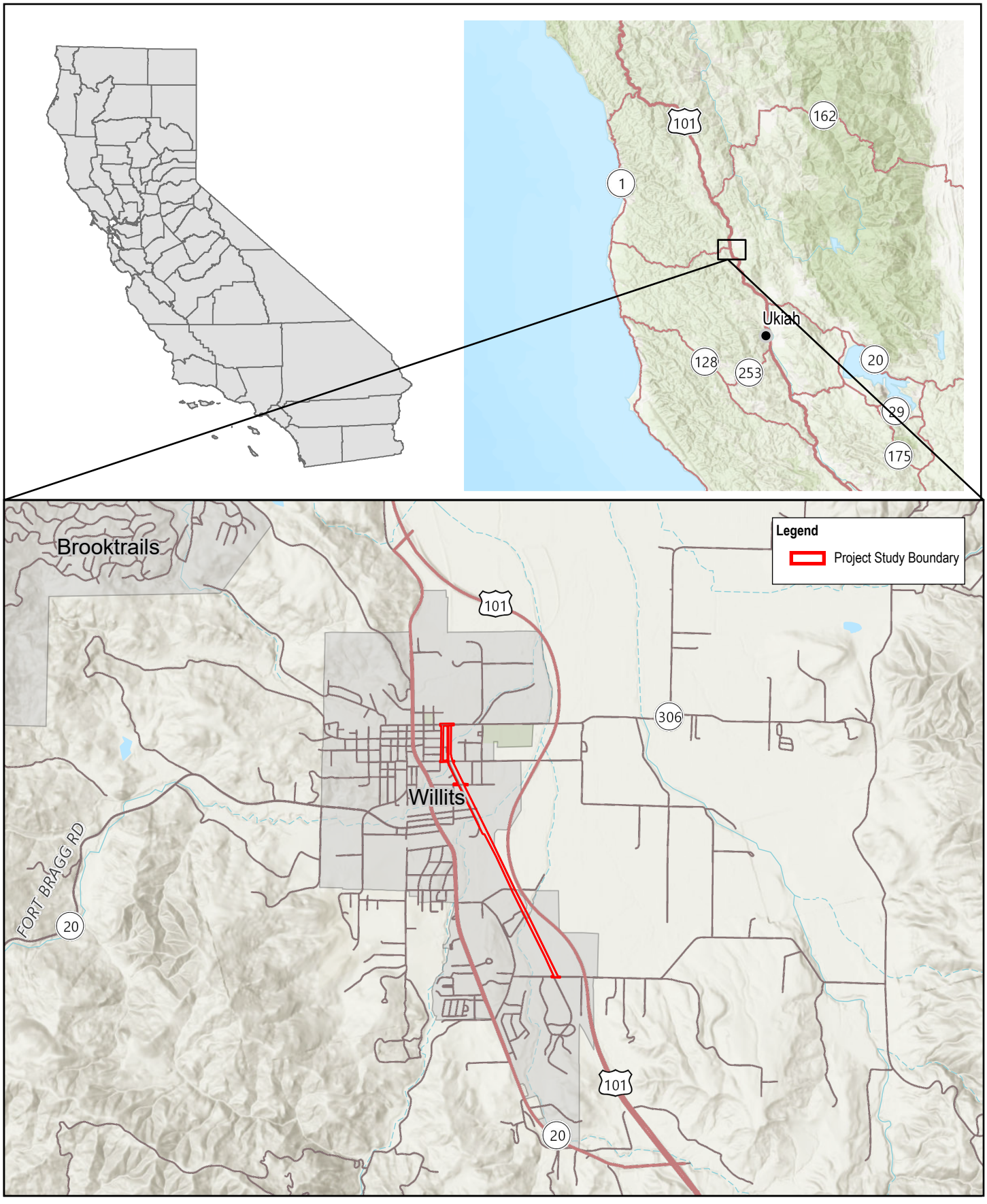
8.2 GHD

Kelsey McDonald, Plant Ecologist, kelsey.mcdonald@ghd.com, 1-707-443-8326

Rose E. Dana, Botanist, rose.dana@ghd.com, 1-707-267-2220

Appendix A

Figures



Paper Size ANSI A

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Miles

Map Projection: Lambert Conformal Conic
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Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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GHD

City of Willits
Willits Rail Trail Project

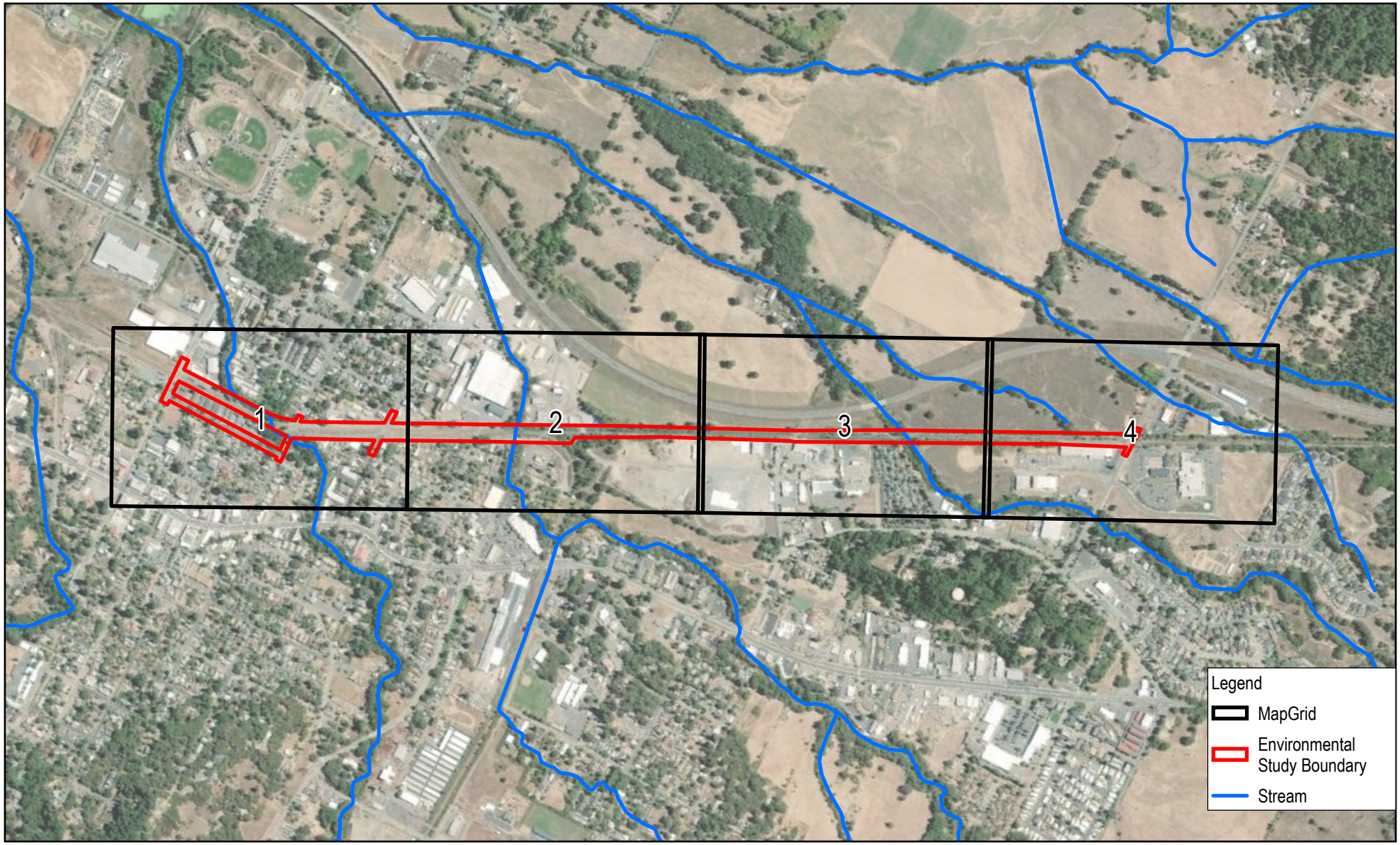
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Revision No. -
Date 1/10/2022

Vicinity Map

FIGURE 1

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City of Willits
Willits Rail Trail Project

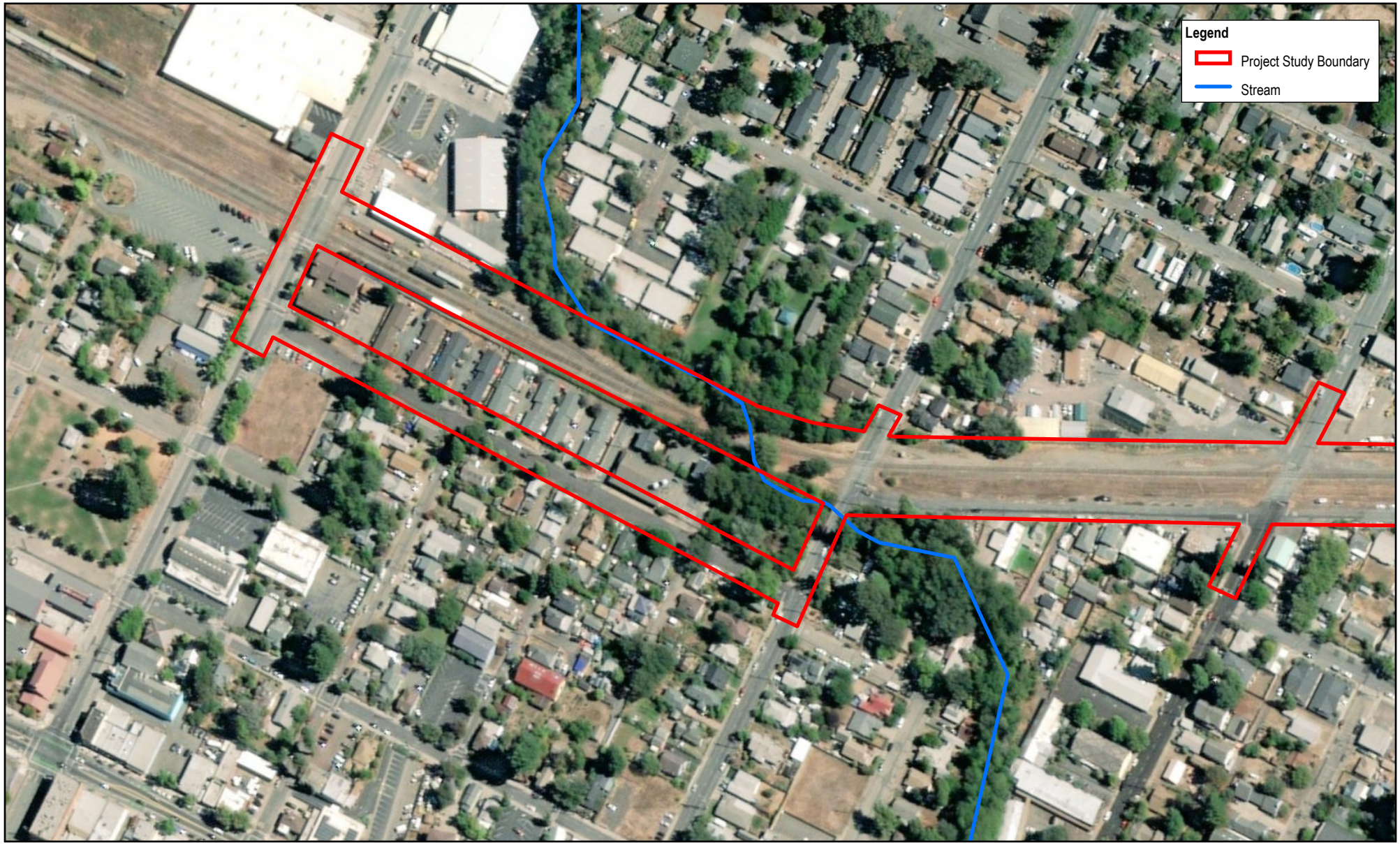
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Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2

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Data source: World Imagery: Maxar. Created by: ethompson3



Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2-1

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Data source: World Imagery: Maxar, Microsoft. Created by: ethompson3



Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2-2

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Data source: World Imagery: Maxar. Created by: ethompson3



Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

GHD

City of Willits
Willits Rail Trail Project

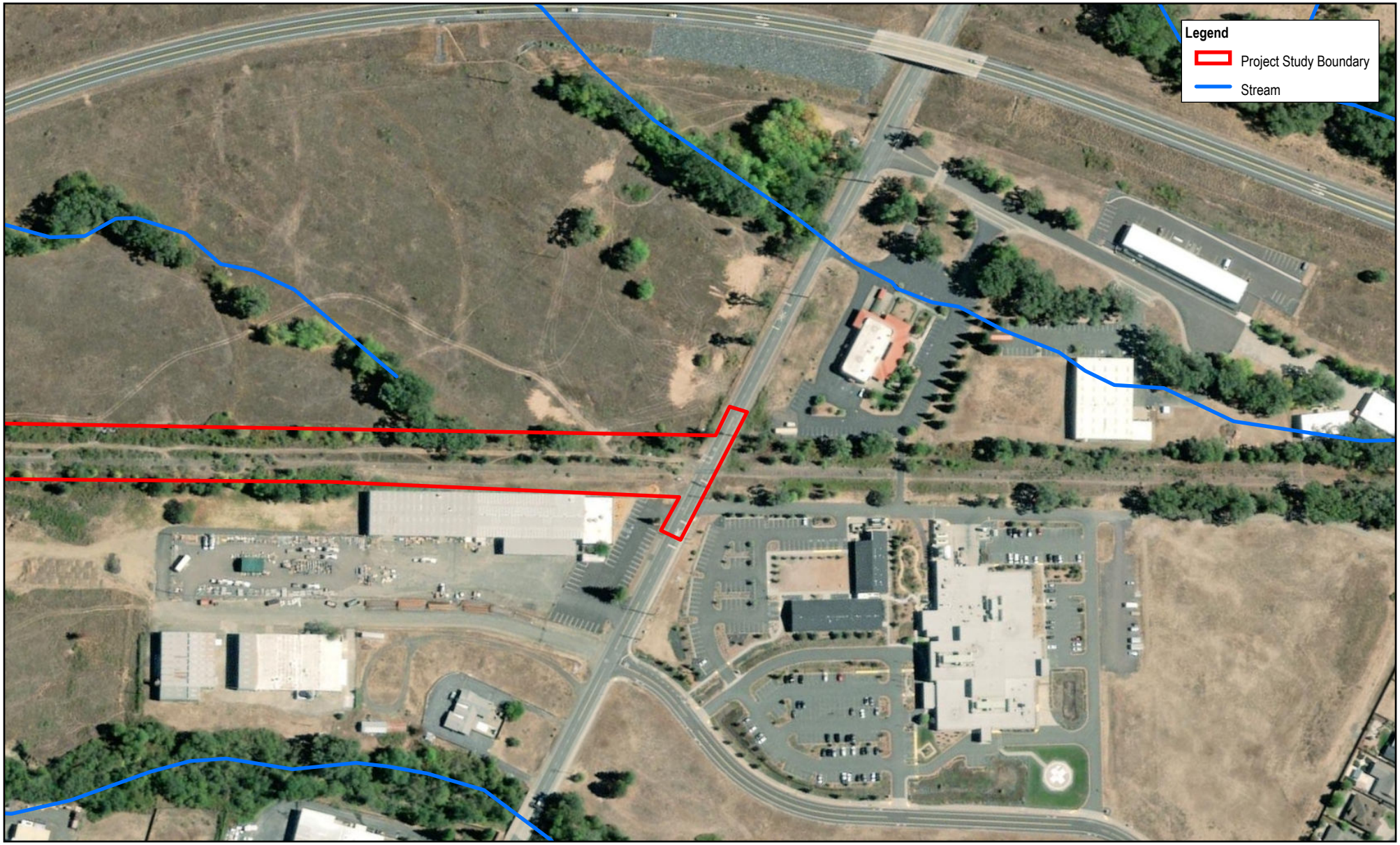
Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2-3

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Data source: World Imagery: Maxar. Created by: ethompson3



Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

GHD

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Study Boundary

FIGURE 2-4

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_002B_StudyBoundaryMB
Print date: 10 Jan 2022 - 11:49

Data source: World Imagery: Maxar, Microsoft. Created by: ethompson3



Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

N

GHD

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Tree Survey

FIGURE 3-1

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_23_Trees
Print date: 10 Jan 2022 - 15:51

Data source: World Imagery: Maxar, Microsoft. Created by: ethompson3



Paper Size ANSI A

0 75 150 225 300

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Tree Survey

FIGURE 3-2

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_23_Trees
Print date: 10 Jan 2022 - 15:52

Data source: World Imagery: Maxar, Microsoft. Created by: ethompson3



Paper Size ANSI A

0 75 150 225 300

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

GHD

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Tree Survey

FIGURE 3-3

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_23_Trees
Print date: 10 Jan 2022 - 15:54

Data source: World Imagery: Maxar, Microsoft. Created by: ethompson3



Paper Size ANSI A

0 75 150 225 300

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

GHD

City of Willits
Willits Rail Trail Project

Project No. **11230579**
Revision No. **-**
Date **1/10/2022**

Tree Survey

FIGURE 3-4

\\ghdnet\ghd\US\Santa Rosa\Projects\561\11230579\GIS\Maps\Deliverables\11230579_WillitsBotanical.aprx - 11230579_23_Trees
Print date: 10 Jan 2022 - 15:55

Data source: World Imagery: Maxar, Microsoft. Created by: ethompson3

Appendix B – Tree Survey Table

Tree ID	Species	Native Status	Diameter Class	Aggregate DBH (inches)	Overall Health	Canopy Structure	Dripline Radius (ft)	DBH of All Trunks (inches)	Height of DBH (ft)	Notes	Latitude	Longitude
1	White alder (Alnus rhombifolia)	Native	Small	14	Fair	Fair	16	14		Some broken branches and resprouting at base	39.41119405	-123.3504625
2	White alder (Alnus rhombifolia)	Native	Large	25	Healthy	Good	21	25			39.41114509	-123.3504324
3	White alder (Alnus rhombifolia)	Native	Small	13	Fair-Healthy	Fair-Good	15	13			39.41113734	-123.3505307
4	White alder (Alnus rhombifolia)	Native	Medium	21.3	Fair	Fair	15	16, 14	5		39.41120213	-123.3503958
5	White alder (Alnus rhombifolia)	Native	Small	13	Fair-Healthy	Fair	8	13			39.41124548	-123.3503824
6	White alder (Alnus rhombifolia)	Native	Small	15	Fair-Healthy	Fair	12	15			39.41109914	-123.3505039
7	White alder (Alnus rhombifolia)	Native	Medium	23.1	Fair	Fair	17	14, 12, 7, 12	6		39.41108337	-123.350448
8	White alder (Alnus rhombifolia)	Native	Large	24.1	Fair-Healthy	Fair-Good	12	16, 18			39.41099294	-123.3504204
9	White alder (Alnus rhombifolia)	Native	Small	17.5	Fair	Fair	12	12, 10, 8		Insect damage	39.41063221	-123.3503632

Tree ID	Species	Native Status	Diameter Class	Aggregate DBH (inches)	Overall Health	Canopy Structure	Dripline Radius (ft)	DBH of All Trunks (inches)	Height of DBH (ft)	Notes	Latitude	Longitude
10	White alder (Alnus rhombifolia)	Native	Small	15	Fair-Healthy	Good	8	15			39.41061957	-123.3503477
11	White alder (Alnus rhombifolia)	Native	Small	15.6	Poor-Fair	Fair-Good	10	12, 10			39.41033479	-123.3504246
12	Weeping willow (Salix babylonica)	Non-Native	Small	12	Fair	Fair	12	12			39.41033672	-123.3504839
13	White alder (Alnus rhombifolia)	Native	Medium	21.2	Healthy	Fair-Good	12	15, 12, 9			39.41015749	-123.3505161
14	Sambucus nigra	Native	Small	17	Poor	Fair	15	12, 12		Old, rot present	39.41046525	-123.3504548
15	Cottonwood (Populus fremontii ssp. fremontii)	Native	Large	27	Healthy	Good	18	27			39.41008407	-123.3505055
16	Valley oak (Quercus lobata)	Native	Medium	22	Healthy	Good	25	22			39.41011087	-123.3504998
17	Sitka spruce (Picea sitchensis)	Native (planted)	Small	15	Healthy	Fair-Good	10	15			39.40995546	-123.3504445
18	Valley oak (Quercus lobata)	Native	Large	30	Healthy	Good	30	30			39.40991393	-123.3504355
19	Coast redwood (Sequoia sempervirens)	Native (planted)	Medium	20	Fair-Healthy	Fair-Good	12	20			39.40976516	-123.3503811

Tree ID	Species	Native Status	Diameter Class	Aggregate DBH (inches)	Overall Health	Canopy Structure	Dripline Radius (ft)	DBH of All Trunks (inches)	Height of DBH (ft)	Notes	Latitude	Longitude
20	Coast redwood (Sequoia sempervirens)	Native (planted)	Medium	21	Fair-Healthy	Good	10	21			39.40975163	-123.350373
21	Coast redwood (Sequoia sempervirens)	Native (planted)	Medium	24	Fair-Healthy	Fair-Good	10	24			39.40970171	-123.3503387
22	Black locust (Robinia pseudoacacia)	Non-native	Medium	19.4	Healthy	Good	14	12, 8, 13	5		39.41013171	-123.3505924
23	Cottonwood (Populus fremontii ssp. fremontii)	Native	Large	31.3	Poor-Fair	Fair	16	30, 9		Large dead main trunk	39.410048	-123.3507034
24	Black locust (Robinia pseudoacacia)	Non-native	Small	14	Healthy	Good	15	14			39.41006294	-123.350707
25	Black locust (Robinia pseudoacacia)	Non-native	Small	17	Fair-Healthy	Fair-Good	12	17			39.41001678	-123.3507082
26	White alder (Alnus rhombifolia)	Native	Small	15	Healthy	Good	13	15			39.40996387	-123.3507063
27	Coast redwood (Sequoia sempervirens)	Native (planted)	Large	92	Fair-Healthy	Fair-Good	15	92		3 large ~24” trunks, not old growth	39.40985477	-123.3506855
28	Valley oak (Quercus lobata)	Native	Small	9	Healthy	Good	12	9			39.40963441	-123.3505542
29	Valley oak (Quercus lobata)	Native	Small	14.3	Healthy	Fair-Good	10	13, 6			39.40959769	-123.3505019

Tree ID	Species	Native Status	Diameter Class	Aggregate DBH (inches)	Overall Health	Canopy Structure	Dripline Radius (ft)	DBH of All Trunks (inches)	Height of DBH (ft)	Notes	Latitude	Longitude
30	Black locust (Robinia pseudoacacia)	Non-native	Small	12	Fair-Healthy	Fair	9	12			39.40924384	-123.3505899
31	Black locust (Robinia pseudoacacia)	Non-native	Small	14	Fair-Healthy	Fair	8	14			39.40924573	-123.3506089
32	Incense cedar (Calocedrus decurrens)	Native (planted)	Large	29	Fair-Healthy	Fair-Good	8	29			39.40908873	-123.3505108
33	Valley oak (Quercus lobata)	Native	Large	30	Healthy	Fair-Good	25	30			39.40887606	-123.349811
34	Valley oak (Quercus lobata)	Native	Large	32	Healthy	Good	22	32			39.40880788	-123.3497673
35	Northern california black walnut (Juglans hindsii)	Native	Small	17	Poor-Fair	Fair	8	17			39.40875116	-123.3497269
36	Valley oak (Quercus lobata)	Native	Medium	19.8	Fair-Healthy	Fair-Good	15	15, 13			39.40679091	-123.3484764
37	Valley oak (Quercus lobata)	Native	Large	32	Healthy	Good	25	32			39.40607683	-123.3480405
38	Valley oak (Quercus lobata)	Native	Small	13	Healthy	Good	12	13			39.40518413	-123.3474848
39	California black oak (Quercus kelloggii)	Native	Small	12	Healthy	Good	10	12			39.40496974	-123.3473418

Tree ID	Species	Native Status	Diameter Class	Aggregate DBH (inches)	Overall Health	Canopy Structure	Dripline Radius (ft)	DBH of All Trunks (inches)	Height of DBH (ft)	Notes	Latitude	Longitude
40	White alder (Alnus rhombifolia)	Native	Large	24.1	Fair	Fair	12	18, 16			39.40469467	-123.3470971
41	White alder (Alnus rhombifolia)	Native	Medium	20	Fair	Fair	12	12, 16			39.40465946	-123.3471724
42	White alder (Alnus rhombifolia)	Native	Small	15.7	Fair-Healthy	Fair-Good	12	14, 7			39.4046442	-123.3471889
43	Valley oak (Quercus lobata)	Native	Large	26			14	26			39.40467719	-123.3471138
44	Valley oak (Quercus lobata)	Native	Medium	19.8	Healthy	Good	10	15, 12, 5			39.40406641	-123.3468008
45	Oregon ash (Fraxinus latifolia)	Native	Medium	24	Fair	Fair-Good	7	24			39.40406641	-123.3468008
46	Oregon ash (Fraxinus latifolia)	Native	Small	16.6	Fair	Fair	12	15, 4, 6			39.40338907	-123.3467192
47	Valley oak (Quercus lobata)	Native	Large	30	Fair-Healthy	Fair-Good	18	30			39.40243638	-123.3456513
48	Valley oak (Quercus lobata)	Native	Small	12	Fair	Fair	6	12			39.40159404	-123.3453179
49	Valley oak (Quercus lobata)	Native	Small	12.4	Healthy	Good	6	12, 3			39.40091481	-123.3447612
50	Valley oak (Quercus lobata)	Native	Large	32.8	Healthy	Good	28	26, 20		On boundary fence line	39.39880512	-123.3432202

Tree ID	Species	Native Status	Diameter Class	Aggregate DBH (inches)	Overall Health	Canopy Structure	Dripline Radius (ft)	DBH of All Trunks (inches)	Height of DBH (ft)	Notes	Latitude	Longitude
51	Valley oak (Quercus lobata)	Native	Small	10.8	Fair-Healthy	Good	7	9, 6			39.39905149	-123.3436815
52	Valley oak (Quercus lobata)	Native	Small	15	Fair-Healthy	Good	15	15			39.39753888	-123.3427577
53	California black oak (Quercus kelloggii)	Native	Medium	24	Healthy	Good	13	24			39.39671981	-123.3418143
54	Red alder (Alnus rubra)	Native	Small	15	Fair-Healthy	Fair	8	12, 9			39.39649664	-123.3417387
55	Red alder (Alnus rubra)	Native	Small	12	Healthy	Good		12			39.39647265	-123.3417623
56	Arroyo willow (Salix lasiolepis)	Native	Small	15	Fair	Fair-Good	16	15			39.39644716	-123.3417623
57	Red alder (Alnus rubra)	Native	Medium	20.5	Poor (in decline)	Poor-Fair	10	14, 15			39.39632785	-123.3419107
58	California black oak (Quercus kelloggii)	Native	Small	13	Fair-Healthy	Fair-Good	15	13			39.39604994	-123.3416969
59	California black oak (Quercus kelloggii)	Native	Small	12	Fair-Healthy	Fair-Good		12			39.39608526	-123.3417271
60	California black oak (Quercus kelloggii)	Native	Large	27	Healthy	Good	17	27		At fence line	39.39591536	-123.3417055

Tree ID	Species	Native Status	Diameter Class	Aggregate DBH (inches)	Overall Health	Canopy Structure	Dripline Radius (ft)	DBH of All Trunks (inches)	Height of DBH (ft)	Notes	Latitude	Longitude
61	Valley oak (Quercus lobata)	Native	Small	13	Healthy	Good		13			39.39583213	-123.3416223
62	Valley oak (Quercus lobata)	Native	Large	26	Fair-Healthy	Fair	12	26			39.39583984	-123.341591
63	California black oak (Quercus kelloggii)	Native	Small	15	Healthy	Fair-Good	13	12, 9			39.39577981	-123.3416512
64	Aleppo pine (Pinus halepensis)	Non-native	Small	12	Fair-Healthy	Fair-Good	8	9, 8			39.39581688	-123.3414908
65	Aleppo pine (Pinus halepensis)	Non-native	Small	11.4	Fair-Healthy	Fair-Good	6	9, 7			39.39578527	-123.3414734
66	Paradise apple (Malus pumila)	Non-native	Medium	19.7	Poor (in decline)	Poor-Fair	9	13, 11, 10	4	Cultivated edible apple	39.39544532	-123.3409905
67	Valley oak (Quercus lobata)	Native	Small	13	Healthy	Good	10	13			39.39502114	-123.3407614
68	Oregon ash (Fraxinus latifolia)	Native	Small	12	Fair-Healthy	Good	16	12			39.39494091	-123.3406314
69	California black oak (Quercus kelloggii)	Native	Small	8	Fair-Healthy	Good	17				39.39386261	-123.3403568
70	Oregon ash (Fraxinus latifolia)	Native	Small	13	Fair-Healthy	Fair-Good	11	13			39.39336751	-123.3396105

Tree ID	Species	Native Status	Diameter Class	Aggregate DBH (inches)	Overall Health	Canopy Structure	Dripline Radius (ft)	DBH of All Trunks (inches)	Height of DBH (ft)	Notes	Latitude	Longitude
71	Oregon ash (Fraxinus latifolia)	Native	Small	13	Healthy	Good	10	13			39.39363501	-123.3398139
72	Valley oak (Quercus lobata)	Native	Large	32.8	Healthy	Good	16	28, 13, 11			39.3929204	-123.3393252
73	Valley oak (Quercus lobata)	Native	Small	16.3	Fair	Fair	12	12, 11	5.5		39.39269531	-123.3392286
74	Valley oak (Quercus lobata)	Native	Medium	20	Fair-Healthy	Good	14	20			39.39170393	-123.3385364
75	Valley oak (Quercus lobata)	Native	Small	12	Fair-Healthy	Fair-Good	15	12			39.39224563	-123.3388695
76	Valley oak (Quercus lobata)	Native	Medium	23	Healthy	Good	20	23		Outside fence line	39.39269477	-123.3392134
77	Valley oak (Quercus lobata)	Native	Small	14	Healthy	Fair-Good	13	14			39.3926784	-123.3391905
78	Valley oak (Quercus lobata)	Native	Medium	20.5	Healthy	Fair	25	14, 15			39.39267107	-123.3391898
79	Valley oak (Quercus lobata)	Native	Small	12	Fair-Healthy	Fair	10	12			39.39266931	-123.3392273
80	Valley oak (Quercus lobata)	Native	Small	13	Fair-Healthy	Fair	10	13			39.392669	-123.3392273

Tree ID	Species	Native Status	Diameter Class	Aggregate DBH (inches)	Overall Health	Canopy Structure	Dripline Radius (ft)	DBH of All Trunks (inches)	Height of DBH (ft)	Notes	Latitude	Longitude
81	Valley oak (Quercus lobata)	Native	Small	13.9	Fair-Healthy	Fair	17	12, 7			39.39264881	-123.3391617
82	Valley oak (Quercus lobata)	Native	Small	13.5	Fair-Healthy	Fair-Good	10	10, 9			39.39263185	-123.3392001
83	Valley oak (Quercus lobata)	Native	Small	14	Fair-Healthy	Fair-Good	10	14			39.39264956	-123.3391464
84	Valley oak (Quercus lobata)	Native	Large	28.8	Fair-Healthy	Fair	20	24, 16		Leaning	39.39260939	-123.3392004
85	Valley oak (Quercus lobata)	Native	Small	12	Fair-Healthy	Fair		12			39.39275086	-123.3392373
86	Valley oak (Quercus lobata)	Native	Small	18	Fair-Healthy	Fair	10	18		Leaning	39.39278961	-123.339224
87	Valley oak (Quercus lobata)	Native	Medium	19	Healthy	Good	20	19			39.39283232	-123.339284
88	Valley oak (Quercus lobata)	Native	Large	34.5	Fair-Healthy	Fair-Good	22	26, 17, 15			39.39220279	-123.338875
100	White alder (Alnus rhombifolia)	Native	Small	13.5	Fair-Healthy	Fair-Good	7	10, 9			39.40463793	-123.3471515

Appendix C. Photo Index



Photo 1. Valley oak # 65.



Photo 2. Valley oak # 62.



Photo 3. Valley oak # 51.



Photo 4. Valley oak # 53.



Photo 5. Valley oak #38.

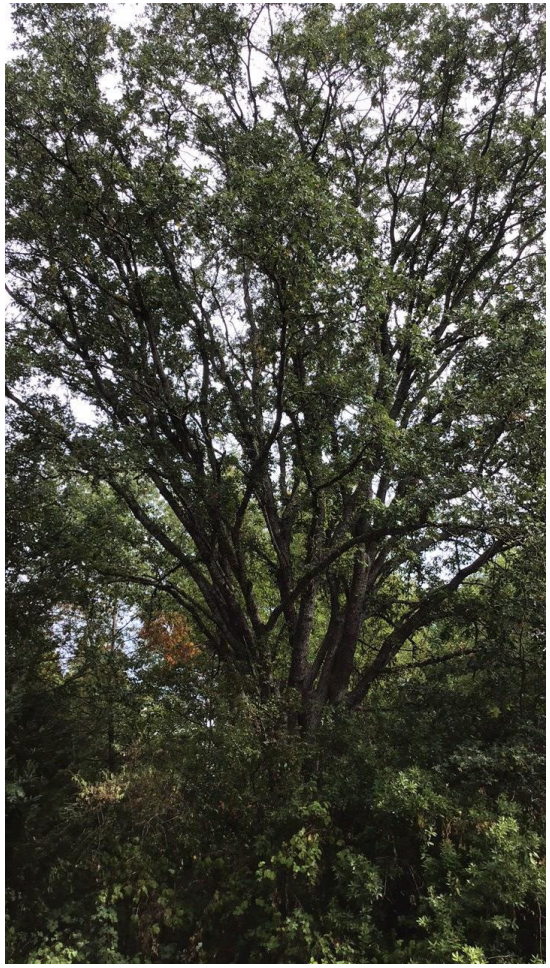


Photo 6. Valley oak #20.



Photo 7. Valley oak # 36 and California black walnut # 37.



Photo 8. California black oak # 58.



Photo 9. California black oak # 54.



Photo 10. Cottonwood #17.



Photo 11. Cottonwood #23 and black locusts #23-24.



Photo 12. White alder #8.



Photo 13. White alder #9.

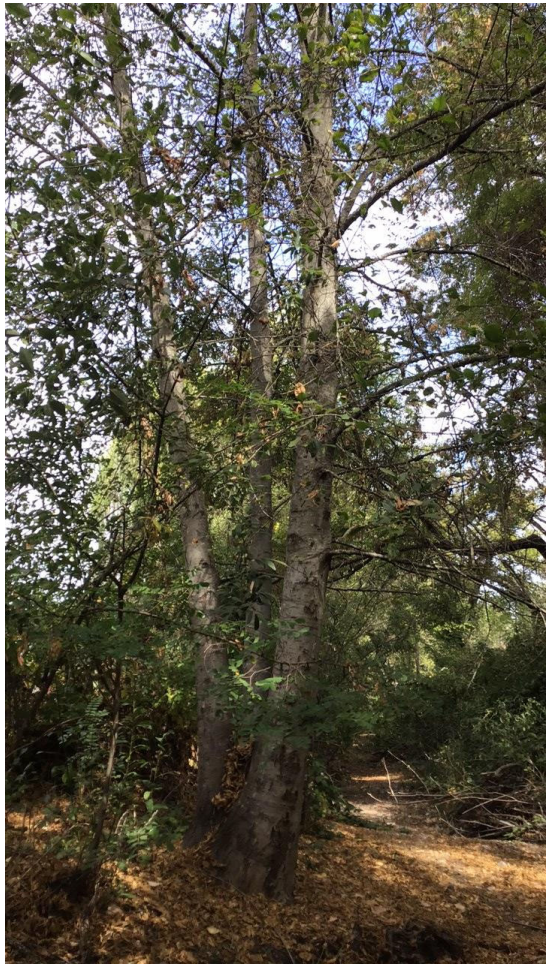


Photo 14. White alder #16.



Photo 15. White alder # 41



Photo 16. White alder #42.



Photo 17. White alder #44.

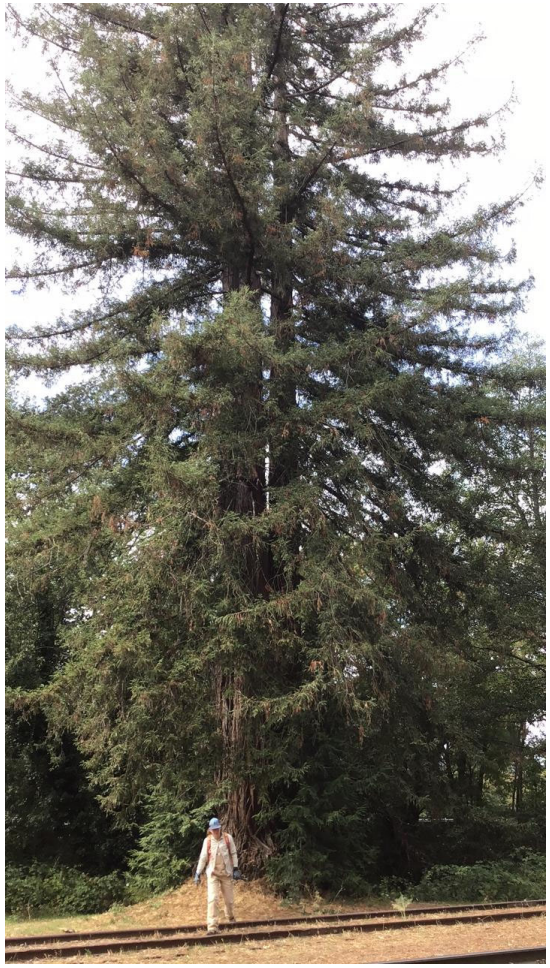


Photo 18. Coast redwood # 29.

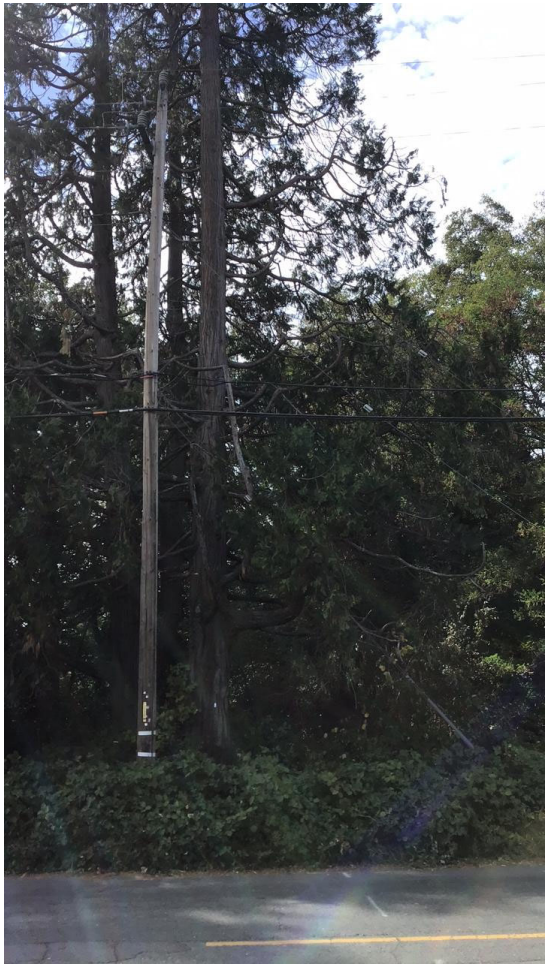


Photo 19. Incense cedar # 34.



Photo 20. Apple tree # 66.

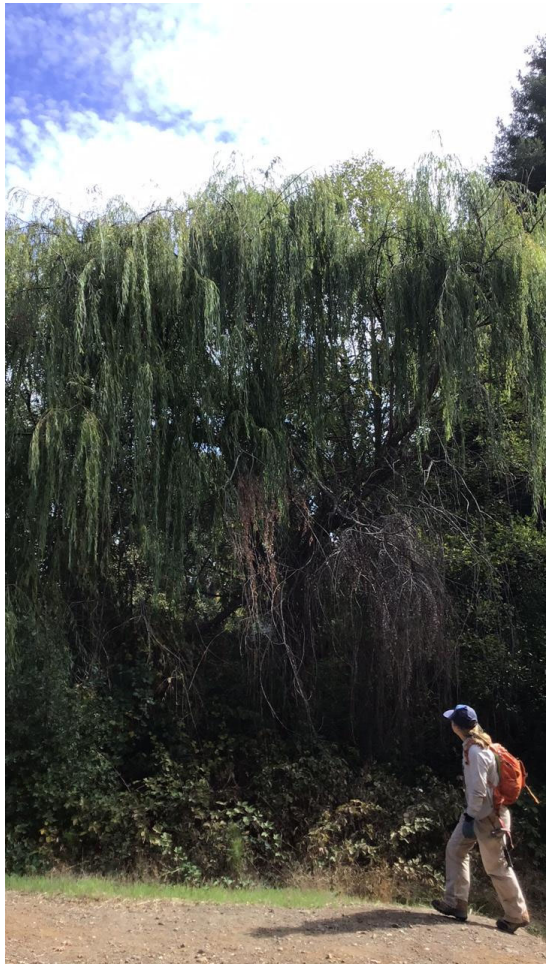


Photo 21. Weeping willow #14.