Appendix F. Wetland and Waters Delineation Report

Wetland and Waters Delineation Report

Washington

Cascade Renewable Transmission June 26, 2024

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Contents

Tables

Appendices

Acronyms

Acronyms used more than once in the report text.

AC	alternating current
BPA	Bonneville Power Administration
CFR	Code of Federal Regulations
CRT	Cascade Renewable Transmission
DAREM	Direct Antecedent Rainfall Evaluation Method
DPS	distinct population segment
Ecology	Washington State Department of Ecology
ESU	evolutionarily significant unit
FEMA	Federal Emergency Management Agency
FIRM	flood insurance rate map
GPS	global positioning system
HDD	horizontal directional drilling
HDR	HDR Engineering, Inc.
HGM	hydrogeomorphic
HTL	high tide line
HVAC	high-voltage alternating current
HVDC	high-voltage direct current
kV	kilovolt
LiDAR	light detection and ranging
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OHWM	ordinary high-water mark
PGE	Portland General Electric
PJD	preliminary jurisdictional determination
RCW	Revised Code of Washington
ROW	right-of-way
SMA	Shoreline Management Act
SMP	Shoreline Master Program
SR 14	Washington State Route 14
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WAC	Washington Administrative Code
WATOR	Washington Tool for Online Rating
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WETS	Climate Analysis for Wetlands Tables
WHCV	Wetlands of High Conservation Value
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation

Executive Summary

HDR Engineering, Inc. (HDR), on behalf of Cascade Renewables Transmission, LLC (CRT), completed a wetland and waterbodies delineation within the proposed Cascade Renewable Transmission Project (Project) survey area in Washington State in April and November 2023. This report describes the methods and findings of the survey and serves to inform project design and support local, state, and federal permitting required for the Project.

In total, nineteen wetlands, nineteen waterbodies, and seven ditches were identified within or immediately adjacent to the Project survey area and are detailed in Section 3 of this report. Wetland 17 and the wetland buffer will be temporarily affected by Project activities. Project impacts for work proposed within the Columbia River are addressed in a Stream Functional Assessment Report developed for the project; no other wetland or water features in Washington State will be affected.

1 Introduction

The proposed Project is a roughly 95-mile 1,100-megawatt (MW) high-voltage direct current (HVDC) electric transmission cable interconnecting the existing Bonneville Power Administration (BPA) Big Eddy 500-kV alternating current (AC) substation located near The Dalles, Oregon, and the existing Portland General Electric (PGE) Harborton 230-kV AC substation located in Portland, Oregon (Figure 1, Appendix E).

As shown on Figure 1, Project Overview, most of the proposed cable alignment would be placed in the bed of the Columbia River, as described in Section 1.1. In Oregon, two converter stations would be constructed, and the cable will be installed landward of the river in The Dalles and Portland. Findings of the wetland delineations completed on land in Oregon will be presented in a separate report.

1.1 Project Overview

At the eastern end of the Project, a converter station is proposed near the Big Eddy substation with approximately 500 feet of overhead, (500-kV) high-voltage alternating current (HVAC) transmission line to connect the converter station to the substation. From the converter station, the transmission cables would be bundled with associated fiber optic communications cable (cable bundle) in underground conduits to the edge of the Columbia River.

The 12-inch cable bundle would be buried in the bed of the Columbia River in Oregon and Washington from roughly The Dalles to Portland. A portion the HVDC cable bundle would be buried underground in Washington approximately 7.5 miles between Stevenson and Hamilton Island, Washington.

Horizontal directional drilling (HDD) would be used to transition from land-to-water at Stevenson, Washington. A landing site would be used to establish an HDD drill pit and stage equipment (Figure 1, Appendix E). From the landing site, the cable bundle would be placed in a trench in the

westbound travel lane of SR 14 until diverted to Ash Lake Road. The cable would be placed in Ash Lake Road for the entire road length and then would connect back to SR 14. The proposed alignment would divert from SR 14 to the south and onto Dam Access Road and continue down to the Columbia River along Ft. Cascades Drive. The cable would follow Ft. Cascades Drive until the landing site proposed within the parking area at Hamilton Island Recreation Area. From this landing site, the cable would be placed via HDD back into the Columbia River, avoiding the shorelands. Based on preliminary design, the proposed trench would be 3 feet wide and with the associated work area, the total work area would be approximately 12 feet wide and would generally follow the westbound travel lanes of SR 14, Ash Lake Road, Dam Access Road and Ft. Cascades Drive. At these locations, the trenched area would be restricted to the paved surface of the roadway and would not affect roadway shoulders.

In Portland, the cable would transition from the Columbia River onto north of Hayden Island via HDD, then be trenched in existing utility rights-of-way across Hayden Island, and installed via HDD beneath the Oregon Slough, landfall at N Marine Drive, and trenched in road rights-of-way to the western converter station in North Portland. The western converter station would be connected to the Harborton substation with approximately underground HVAC transmission line installed in private property and in road right-of-way (ROW) to the Willamette River edge. The HVAC would be installed via HDD under the Columbia Slough and Ramsey Lakes wetland complex and under the Willamette River.

1.2 Project Survey Area

The wetland survey area on land in Washington State occurs in Skamania County, in the cities of North Bonneville and Stevenson, and within roadway ROW maintained by the Washington State Department of Transportation (WSDOT) and Skamania County. In general, wetlands and waters, and required buffers were delineated within at least 25 feet on either side of the proposed alignment. The delineation may have extended farther than 25 feet where permissions to enter were granted. The delineation was restricted to only visual field observations in a few areas where access was restricted or where surveyor safety was a concern. Alternative delineation methods applied in these areas are outlined in Section 2.

1.3 Landscape Setting

The proposed Project would occur within Township 2 North (T2N), Range 7 East (R7E), Sections (S) 1, 2, 10, 11, 14, 15, 16, 20, 21, 22 and 29 at elevations between 45 and 230 feet above mean sea level with highest elevations occurring at Ash Lake Road. The Project survey area is within the Middle Columbia-Hood watershed (Hydrologic Unit Code 17070105) and Washington Water Resource Inventory Areas (WRIA) 28 Salmon-Washougal and 29 Wind-White Salmon.

The proposed Project lies within the Cascades (4) level III ecoregion and the Western Cascades Lowlands and Valleys (4a) level IV ecoregion (EPA 2016). The Cascades ecoregion is primarily characterized by mountains underlain by volcanic rock shaped by alpine glaciations. The major landforms within the survey area and surrounding landscape include steep ridges generally less than 3,200 feet in elevation associated with the Cascades Mountain Range, and the relatively narrow Columbia River valley. The climate is wet (60-90 mean annual inches of precipitation) and mild (mean temperature 31-78 degrees Fahrenheit [°F]), promoting coniferous forests comprised mainly

of Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), red alder (*Alnus rubra*) and vine maple (*Acer circinatum*) (Thorson et al. 2003).

The survey area is within Land Resource Region (LRR) A – Northwest Forest, Forage, and Specialty Crop (USDA NRCS 2022). Forest, recreation, and timber production are the main industries in the region. General land uses within and immediately adjacent to the survey area include roadway ROW, urban development, utility infrastructure, state, federal and privately held lands, and recreation areas associated with the Columbia River, the Pacific Crest Trail and the Fort Cascades Historic Site.

2 Methods

Wetlands and waterbodies within the survey area were assessed using a two-step process. HDR biologists first completed a review of existing literature, maps, and other materials from federal, state, and local regulatory resources (Section 2.1) to determine if wetlands and other waters of the United States (WOTUS) or waters regulated by the state of Washington could occur within the survey area. In addition, prior to conducting field surveys, HDR biologists reviewed Project-specific 2-foot contours derived from light detection and ranging (LiDAR) methods as well as historical, seasonal, and current ESRI, Google Earth, and Google Maps aerial imagery.

Precipitation analysis was conducted prior to each field investigation to determine if climatic and hydrologic conditions were typical for the time of year each survey was completed (Section 2.2).

Following this review, HDR biologists completed two field investigations of the survey area, as described in Section 1.2, that included wetlands and waters identification, delineation, and classification (Section 2.4). Results of desktop review are presented in Section 2.3.

2.1 Desktop Review Material

Existing documents reviewed for these surveys include the following:

2.1.1 Federal

- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (FEMA 1986)
- National Hydrography Dataset (NHD) maps and data (USGS 2023a)
- U.S. Geological Survey (USGS) topographic maps (USGS 2023b)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Land Resource Regions (USDA NRCS 2022)
- USDA NRCS Web Soil Survey (USDA NRCS 2023a)
- USDA NRCS Hydric Soils List (USDA NRCS 2023b)
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Mapper (USFWS 2023)
- USFWS Critical Habitat Mapper (USFWS 2022)

- National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat and Critical Habitat Mappers (NOAA 2021 and NOAA 2023a)
- Climate Data for Bonneville Dam weather station (USDA NRCS 2023c and NOAA 2023b)

2.1.2 State

- Washington State Department of Ecology (Ecology) Coastal Atlas (Ecology 2023a)
- Washington Department of Natural Resources (WDNR) Forest Practices Application Mapping Tool (WDNR 2023a)
- WDNR Natural Heritage Program Data Explorer for Wetlands of High Conservation Value (WDNR 2023b)
- Washington Department of Fish and Wildlife (WDFW) Fish Passage Inventory, Assessment, and Prioritization, Web Application (WFDW 2023a)
- WDFW Priority Habitats and Species on the Web (WDFW 2023b)
- WDFW SalmonScape web application (WDFW 2023c)
- WDFW Statewide Washington Integrated Fish Distribution (SWIFD) Web Map Viewer (WDFW 2023d)

2.1.3 Local

- City of North Bonneville Municipal Code, Title 21 Environmental Protection (City of North Bonneville 2015) and Shoreline Master Program (SMP; City of North Bonneville 2019)
- City of Stevenson Municipal Code, Title 18 Environmental Protection (City of Stevenson 2024) and SMP (City of Stevenson 2022)
- Skamania County Municipal Code, Title 19 Critical Areas (Skamania County 2023a) and SMP (Skamania County 2020)
- Skamania County Shoreline Environmental Designation Map (Skamania County 2023b)
- Skamania County Preliminary Flood Hazard Area Viewer (Skamania County 2023c)

2.2 Precipitation and Data Analysis

Precipitation and climate data for the survey area was evaluated for the April 19-21, 2023, and November 6-10, 2023 field investigations using data from the Bonneville Dam weather station (Station ID 350897/Multnomah County FIPS 41051), located in Oregon approximately 0.5 miles from the west end of the survey area. The Bonneville Dam weather station is closest in a similar geographic position to the proposed Project with the requisite data history to evaluate normal rainfall conditions.

Normal rainfall was analyzed using data for the past 30 years (1991-2021), derived from the WETS table for the Bonneville Dam weather station (USDA NRCS 2023c). Antecedent rainfall data used for the analysis was also collected at Bonneville Dam (NOAA 2023b). To determine if the overall recorded rainfall conditions during the 3 months prior to the surveys were within normal range, drier

than normal or wetter than normal, these precipitation data were analyzed using the Direct Antecedent Rainfall Evaluation Method (DAREM) (Sumner et al. 2009).

2.2.1 Climate and Growing Season

The proposed Project is within Washington state climate division 5 - Cascade Mountains West (NOAA 2023c) and within the Western Mountains, Valleys, and Coast region as defined by the U.S. Army Corp of Engineers (USACE) *Regional supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (Regional Supplement; Environmental Laboratory 2010). Generally, the division in climate zones in this area of Washington State is defined by the Cascade Mountain Range. Climate west of the range is cooler and more humid, with a shorter dry season and annual precipitation greater than 20 inches.

According to the Bonneville Dam WETS table, average annual precipitation between 1991 and 2021 was 80.06 inches. The average temperature for the same period ranged from 34.7°F in January to 80.6°F in August. The growing season is 322 days, beginning February 1 and ending December 20 (USDA NRCS 2023c).

2.2.2 April 2023 Field Investigation

During the 3 months prior to April field investigations (January – March 2023), antecedent rainfall received near the survey area was 19.26 inches (Table 2-1). Rainfall conditions were drier than normal during January and February, and within normal range for March. Results of DAREM indicated the amount of rainfall received in the area during the same period was below normal range (Table 2-2). Antecedent rainfall recorded in the 2 weeks prior to the first day of field investigations (April 5-18, 2023) was 4.03 inches, approximately 1.07 inches above the 2.96-inch average for the same time period. Rainfall received the 3 days of the survey was 0.41 inches above average.

Table 2-1. Summary of Precipitation Analysis January - March 2023

Month	Recorded Precipitation (inches)	Average Precipitation (inches)	Percent of Average Recorded	30% chance less than or more than ranges for normal precipitation (inches)
January 2023	6.91	11.56	59.7%	<8.98 >13.38
February 2023	5.56	8.74	63.6%	<6.21 >10.35
March 2023	6.79	8.77	77.4%	<6.07 >10.44
Total	**19.26**	**29.07**	**66.2%**	–

Table 2-2. Results of Precipitation Analysis using DAREM January - March 2023

Month	30% less than	Average	30% more than	Rainfall	Condition
January 2023	8.98 in.	11.56 in.	13.38 in	6.91 in.	Dry
February 2023	6.21 in.	8.74 in.	10.35 in.	5.56 in.	Dry
March 2023	6.07 in.	8.77 in.	6.79 in.	6.79 in.	Normal

2.2.3 November 2023 Field Investigation

During the 3 months prior to November field investigations (August – October 2023), antecedent rainfall received near the survey area was 7.93 inches (Table 2-3). Rainfall conditions were within normal range for all preceding months. Results of DAREM indicated the amount of rainfall received in the area during the same period was within normal range (Table 2-4). Antecedent rainfall recorded in the 2 weeks prior to the first day of field investigations (October 23 – November 5, 2023) was 6.37 inches, approximately 1.85 inches above the 4.52-inch average for the same time period. Rainfall received the 5 days of the survey was 0.78 inches above average.

Table 2-3. Summary of Precipitation Analysis August - October 2023

Month	Recorded Precipitation (inches)	Average Precipitation (inches)	Percent of Average Recorded	30% chance less than or more than ranges for normal precipitation (inches)
August 2023	0.26	0.88	29.5%	<0.22 >0.91
September 2023	2.52	2.68	94.0%	<1.01 >3.24
October 2023	5.15	7.34	70.1%	<4.91 >8.79
Total	**7.93**	**10.90**	**72.7%**	–

Table 2-4. Results of Precipitation Analysis using DAREM August - October 2023

Month	30% less than	Average	30% more than	Rainfall	Condition
August 2023	0.22 in.	0.88 in.	0.91 in	0.26 in.	Normal
September 2023	1.01 in.	2.68 in.	3.24 in.	2.52 in.	Normal
October 2023	4.91 in.	7.34 in.	8.79 in.	5.15 in.	Normal

2.3 Additional Desktop Review Summary

Precipitation received in the area in the 2 weeks prior to each field investigation was higher than normal rainfall recorded in the area, averaged between 1991 and 2021 (Section 2.2). Wetland biologists anticipated that false wetland hydrology indicators could be encountered during field investigations. Observations of suspected false positives for hydrology indicators are noted on wetland determination field forms.

Multiple wetlands, streams and other waterbodies are mapped within the survey area according to the NWI and NHD databases as well as state and local databases (Figure 2; USFWS 2023, USGS 2023a, Ecology 2023a). No local or statewide wetland inventory information was found. The Washington Department of Ecology maps the Columbia River as shoreline of statewide significance. According to FEMA and Skamania County, the 100-year floodplain occurs within the survey area but is confined to areas directly adjacent to the Columbia River near HDD Area 9 (Figure 4, Page 1) and near the intersection of Ash Lake Road and SR 14 (Figure 4, Page 30) (FEMA 1986, Skamania County 2023c). The 100-year floodplain will not be affected by Project activities. No spatial data for the 100-year floodplain was available for incorporation on report maps.

Known rare plant occurrences for Columbian yellowcress (*Rorippa columbiae*) and western ladies' tresses (*Spiranthes porrifolia*) are mapped by the Washington Natural Heritage Program within the

survey area at Hamilton Island Recreation Area (WDNR 2023b). No high-quality ecosystems are mapped in the survey area.

According to the NRCS and hydric soil data for Skamania County, no hydric soils occur within the survey area (Figure 3; USDA NRCS 2023a and 2023b). Soils mapped within the survey area include:

- Arents, 0 to 5 percent slopes
- Bonneville stony sandy loam
- Steever stony clay loam, 2 to 30 percent slopes
- Steever stony clay loam, 30 to 65 percent slopes

The survey area is located within WDFW mapped priority habitat for the northern spotted owl (*Strix occidentalis caurina*) (WDFW 2023b), but no primary constituent habitat elements would be affected by the proposed Project. A fresh water forested/shrub wetland priority habitat is mapped for a perennial stream along Ash Like Road; the stream will not be affected by Project activities.

2.4 Field Investigation Methods

HDR biologists conducted two field investigations within the Project survey area on April 19 - 21, and November 6 - 10, 2023, to identify and delineate wetlands and waterbodies. Online resources, outlined in Section 2.1, were reviewed prior to and in preparation for the field investigations; results of the desktop review are documented in this section, in subsequent report sections, and on wetland determination data forms, where appropriate (Appendix B).

2.4.1 Wetlands

Alternative Delineation Methods

The survey area was investigated for wetlands using the methods described in the USACE *Wetlands Delineation Manual* (Manual; Environmental Laboratory 1987) and the Regional Supplement (Environmental Laboratory 2010). These standard three-parameter wetland methodologies are described in Appendix A.

Alternative methodologies described in this section were applied in circumstances where some standard methodologies could not effectively be used to delineate wetland boundaries. These circumstances included areas with excavation restrictions, property access issues, field safety concerns, recent human disturbance and recently formed wetlands. Delineators implemented a combination of applicable standard methods as well as methods for atypical situations outlined in Section F of the Manual and difficult wetland situations outlined in Chapter 5 of the Regional Supplement. Additional desktop resources, described in the following paragraph, were used to aid in wetland boundary determinations for Wetland 1 through Wetland 9 (detailed summaries of delineated features are presented in Section 3). Application of alternative methods is explained below and on wetland determination data forms (Appendix B).

The western portion of the survey area along Ft. Cascades Drive occurs in a “No Dig” zone within the Hamilton Island Recreation Area and Fort Cascades Historic Site operated by the USACE. No soils or subsurface hydrology were evaluated. Wetlands delineated in this area were assumed to have hydric soils. The boundaries for Wetland 1 through Wetland 4 were conservatively estimated using field observations of geomorphic position, vegetation communities and evidence of surface

hydrology, as well as Project-specific topography including 2-foot contours derived from LiDAR data, current and historic aerial and ground-level imagery, agency databases of known or presumed presence of protected natural resources, and best professional judgement.

The same alternative methods were used for Wetland 5 and Wetland 6 due to property access issues and Wetland 7 and Wetland 8 due to safety concerns related to the narrow shoulders and traffic speed along SR 14. Field observations for these wetlands were made from SR 14 ROW and methods are outlined on wetland determination data forms.

During the April field investigation, vegetation and soils at the eastern boundary of Wetland 9 (Figure 4, Page 20) had been recently and significantly disturbed. Research and information from local agency personnel indicated the disturbance may have been the result of a recently buried power line related to a county utility project. Aerial imagery of the area taken in October 2022 suggests the disturbance occurred in early fall of the same year, roughly 8 to 10 months prior to the field investigation. The extent of disturbance included the removal of all vegetation and excavation of native soils to a depth roughly between 1 and 4 feet. The area had been filled with gravelly soil and graded. Straw wattles were in place at the time of the investigation. Some identifiable vegetation was established at the time of the April investigation but was likely not the result of restoration (e.g., plantings or hydroseeding). The stream adjacent to the west (Stream 3) was also disturbed during the utility work; however, the ordinary high-water mark (OHWM) of the stream channel could be identified during the investigation.

Recent ground-level imagery showed a distinct break in vegetation from hydrophytic reed canary grass (*Phalaris arundinacea*) and broadleaf cattail (*Typha latifolia*) to more upland species such as Himalayan blackberry (*Rubus armeniacus*) and St. John's wort (*Hypericum perforatum*) at the eastern delineated boundary of Wetland 9. Vegetation observed and recorded in this area during the April investigation is included on wetland determination data forms W9-P1 and W9-P2; the wetland boundaries appear to be consistent with the vegetation breaks visible on ground-level images. Vegetation community differences are related to geomorphic position (depression located at toe slope) and hydrology inputs from Stream 3.

Wetland 9 was revisited briefly during the November field investigation. Vegetation was mostly reestablished with a distinct break in vegetation along the delineated wetland boundary. Dominant wetland plants included reed canary grass, broadleaf cattail and field horsetail (*Equisetum arvense*). Upland areas were dominated by orchard grass (*Dactylis glomerata*), an unidentified Poa species, Himalayan blackberry, common dandelion (*Taraxacum officinale*), English plantain (*Plantago lanceolata*), Canada thistle (*Cirsium arvense*), and bull thistle (*Cirsium vulgare*).

HDR staff examined soils in Wetland 9 using methodology for problematic hydric soils outlined in the Manual and Regional Supplement. Most native soil upper layers within and adjacent to the eastern boundary of the wetland had been removed during utility installation and horizons where wetland soils are likely to form (12 to 24 inches below ground surface) could not be located. Because the soil disturbance extended to the edge of Stream 3, it is assumed that if left undisturbed, prolonged soil saturation from the stream would contribute to the future development of hydric soils within the delineated boundary of Wetland 9; therefore, hydric soils are assumed within the wetland boundary. In accordance with the procedure for problematic hydric soils outlined in the Regional Supplement:

1. Vegetation within the wetland plot at the eastern boundary of Wetland 9 was determined to be hydrophytic.
2. Strong primary and secondary hydrology indicators were observed within the wetland boundary.
3. The soil profile was mainly comprised of gravelly fill material and the wetland was located within a topographic depression at a toe slope where water is likely to collect.
4. Native soils were removed during recent buried utility project and replaced with fill material. Considering the reestablishment of hydrophytic vegetation and strong hydrology indicators, it is likely that hydric soils were present within the wetland boundary prior to the disturbance and will form again if left undisturbed.

Wetland 19 occurs north of Ash Lake Road in a small depression on a narrow terrace formed on a slope above Ashes Lake. Wetland hydrology is attributed to drainage of upslope hills to a small stream channel that occurs along the western boundary of the wetland (Stream 6). The channel discharges to a culvert below grade of Ash Lake Road and hydrology continues downslope to Ashes Lake. During the field investigation, the culvert was overgrown with reed canarygrass creating a partial blockage and causing overbank flow from Stream 6 into the adjacent depression. Historic aerial and ground-level images indicate a shift in dominant vegetation in the wetland from Himalayan blackberry to reed canarygrass over the last 20 years or more. Multiple soil probes were investigated throughout the wetland and soils were mainly comprised of silt and sandy loams saturated to the surface. Sandy loams were more prominent toward the center of the wetland. Soils were allowed to dry prior to evaluation for redoximorphic features and other hydric soil indicators.

The wetland exhibited strong indicators of hydrophytic vegetation and wetland hydrology but lacked hydric indicators (Figure 4, Page 27). HDR staff determined soils in Wetland 19 to be hydric using methodology for problematic hydric soils outlined in the Manual and Regional Supplement.

1. The wetland is dominated by reed canarygrass and meets the rapid test for hydrophytic vegetation.
2. Strong primary wetland hydrology indicators were observed within the wetland and excavated soil pit.
3. Soils were mainly comprised of sandy loam formed in a depression with roughly 2% grade in an area of convergent slopes and likely to collect and concentrate water. Redox concentrations were observed beginning 20 inches below ground surface.
4. This area is likely a developing wetland caused by a partially blocked culvert that creates impoundment of runoff and overbank flow from Stream 6, inundating the depression during periods of prolonged rainfall. Hydric soils may be slow to form because of the sandy nature of the soils and because water is still able to drain the area albeit at a slower rate.

Additionally, a total of seven verification plots were evaluated to confirm upland conditions in suspect areas. Verification Plot 1 and 2 occurred within the “No Dig” zone within the Hamilton Island Recreation Area. Alternative methodologies were applied as described in in this section to determine if a particular area was upland.

Application of Wetland Buffers

Each wetland was assessed using the Washington State Wetland Rating System for Western Washington manual with 2023 update (Wetland Rating System; Hruby & Yahnke 2023). The rating system scores wetlands according to their capacity to improve water quality, maintain hydrologic integrity, and provide habitat. The system uses the scores or special characteristics, if present, to place wetlands into one of four categories, which have corresponding implications for permitting and mitigation. Wetlands of High Conservation Value (WHCV) were determined using guidance from the Wetland Rating System and the Washington Natural Heritage Program online data explorer to identify if wetland boundaries overlap with known occurrences of rare plants or rare and high-quality ecosystems (Hruby & Yahnke 2023, WDNR 2023b). If occurrences overlapped with any part of the wetland, the wetland meets the criteria for WHCV and is considered a Category 1 wetland. Rating forms were completed for each delineated and estimated wetland using Ecology's online Washington Tool for Online Rating (WATOR; Ecology 2023b). For rating delineated wetlands that extended outside the survey area, the boundary for the entire wetland was estimated using aerial images, topographic contours and publicly available agency data; therefore, some wetlands appear larger on the rating form than the wetland delineation maps. Wetland rating forms are included in Appendix C and summarized in Section 3.

The Project survey area intersects the jurisdictions of the City of Stevenson, the City of North Bonneville, and Skamania County. The local jurisdiction municipal code determines standard wetland buffers according to the assigned wetland category derived from Ecology's Wetland Rating System and in accordance with the land use intensity designation at the wetland location. The following municipal codes were used to determine buffers for wetlands delineated within the survey area and wetlands adjacent whose buffer fell within the survey area:

- City of Stevenson Municipal Code 18.13 (City of Stevenson 2024)
- City of North Bonneville Municipal Code 21.10 (City of North Bonneville 2015)
- Skamania County Municipal Code 19.03 (Skamania County 2023a)

In general, and in accordance with local guidance, wetland buffers do not extend onto or past impervious surfaces and unvegetated developed areas with ongoing disturbance (e.g. gravel driveways and maintenance yards). In many cases, riparian stream buffers overlap with wetland buffers. Wetland buffer requirements are summarized in Table 2-5, Table 2-6, and Table 2-7. Wetland buffers are shown on Figure 4, Appendix E.

Table 2-5. City of Stevenson Wetland Protective Buffer Widths

Wetland Category		Category IV (ft)*			Category III (ft)			Category I & II (ft)		
Land Use Intensity		Low	Medium	High	Low	Medium	High	Low	Medium	High
Habitat Score	5 or less	-	-	-	40	60	80	50	75	100
	6 to 7	25	40	50	75	110	150	75	110	150
	8 to 9	-	-	-	150	225	300	150	225	300

Source: City of Stevenson 2024: 18.13.100, Table 18.13.100-1. *Some Category IV buffer widths not provided in Table 18.13.100-1.

Table 2-6. City of North Bonneville Wetland Buffers

Wetland Category		Category IV (ft)			Category III (ft)			Category I & II (ft)		
Land Use Intensity		Low	Medium	High	Low	Medium	High	Low	Medium	High
Habitat Score	3-4	25	40	50	40	60	80	50	75	100
	5	25	40	50	60	90	120	70	105	140
	6	25	40	50	65	100	135	90	135	180
	7	25	40	50	75	110	150	110	165	220
	8	25	40	50	-	-	-	130	195	260
	9	25	40	50	-	-	-	150	225	300

Source: City of North Bonneville 2015: 21.10.070, Tables 21.10.070-1, 21.10.070-2 and 21.10.070-3

Table 2-7. Skamania County Wetland Buffers

Wetland Category		Category I (ft)			Category II (ft)	Category III (ft)	Category IV (ft)
Land Use Intensity		Low	Medium	High	-	-	-
Habitat Score	5 or less	50	85	100	100	50	25
	6	75	120	150			
	7	100	155	200			
	8	125	190	250			
	9	150	225	300			

Source: Skamania County 2023a:19.03.040, Tables 19.03-1 and 19.03-2

2.4.2 Waterbodies

HDR biologists identified the OHWM and bankfull width on non-tidal waterbodies in the survey area using Ecology's (Anderson et al. 2016) guidance for OHWM identification, which is based on the Shoreline Management Act (Revised Code of Washington [RCW] 90.58.030(2)(c)) and Washington Administrative Code [WAC] 173-22-030(5)). Biologists looked for physical indicators, including, but not limited to, a natural scour line impressed on the bank, distribution of upland and water tolerant vegetation, and drift deposits.

The Columbia River is tidally influenced from the Pacific Ocean to Bonneville Dam (Roegner et al. 2010, ODSL 2023). Biologists determined the river high tide line (HTL), as defined by 33 CFR 328.(c)(4), by observations of a more or less continuous deposit of debris on the shore, physical markings and characteristics, and vegetation lines.

The OHWM and HTL for large streams within the survey area were surveyed using a Trimble global positioning system (GPS) unit with sub-meter accuracy. Smaller streams (<10 feet wide) were delineated by taking points along the thalweg of the stream section within the survey area. Where the stream extended outside the survey area, the centerline of the stream was digitized using 2-foot contours, elevation data from USACE, and the NHD dataset.

Waters identified in the survey area were classified according to the stream definitions and typing systems detailed in the City of North Bonneville (2015), City of Stevenson (2024) and Skamania County (2023b) critical areas designation and protection ordinances as well as the WDNR Forest Practices Application Mapping Tool (WDNR 2023a). These stream typing systems correspond to the stream typing system under WAC 222-16-030. Stream typing criteria are described in Table 2-8, Table 2-9, and Table 2-10. The stream types described in this report are based on the stream reaches within the survey area; stream types may be different in downstream reaches. Fish

presence was determined through the review of online resources, an assessment of the available habitat, and the hydrologic condition of identified surface waters (NOAA 2023a, WDFW 2023a, WDFW 2023b, WDFW 2023c, WDFW 2023d).

Table 2-8. City of Stevenson Stream Typing System and Buffer Requirements

Water Type	Description	Buffer Width (feet)
Type S	Waters identified as shorelines of the state (Columbia River and Rock Cove).	150
Type F, anadromous fish bearing stream	Streams and waterbodies that are known to be used by fish, or meet the physical criteria to be potentially used by fish. Type F streams may or may not have flowing water all year; they may be perennial or seasonal.	100
Type Np	Type Np waters are streams that have flow year-round and may have spatially intermittent dry reaches downstream of perennial flow. Type Np streams do not meet the physical criteria of a Type F stream. This also includes streams that have been proven not to contain fish using methods described in Forest Practices Board Manual Section 13.	50
Type Ns	Type Ns waters are streams that do not have surface flow during at least some portion of the year, and do not meet the physical criteria of a Type F stream.	50
Other	Irrigation ditches, canals, stormwater run-off devices, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans are not assigned a water type and are therefore not regulated as riparian habitats.	0

Source: City of Stevenson 2024:18.13.095, Table 18.13.095-1

Table 2-9. City of North Bonneville Stream Typing System and Buffer Requirements

Water Type	Description	Buffer Width (feet)
Type S	Waters identified as shorelines of the state (Columbia River).	150
Type F, anadromous fish bearing stream	Perennial or fish bearing waters.	100
Type F, non-anadromous fish bearing stream	All perennial waters that are not fish bearing.	75
Type Np	Less than 3 feet in width on average.	50
Type Ns	Seasonal streams with a defined channel.	25

Source: City of North Bonneville 2015:21.10.070, Table 21.10.070-8

Table 2-10. Summary of Skamania County Stream Typing System and Buffer Requirements

Water Type	Description	Buffer Width (feet)
DNR Type S	S waters are all waters, within their bankfull width, as inventoried as "shorelines of the state" under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW, including periodically inundated areas of their associated wetlands. Type S shorelines are regulated under the county shoreline master program (SMP).	Rural Conservancy Designation: 150 High Intensity Designation: 35
DNR Type F	Type F waters are segments of natural waters which are not classified as Type S waters and have a high fish, wildlife, or human use. These are segments of natural waters and the periodically inundated areas of their associated wetlands.	100
Type Np	Type Np waters are all segments of natural waters within defined channels that are perennial non-fish-habitat streams. Perennial streams are waters that do not go dry at any time of a year of normal rainfall. However, for the purpose of water typing, Type Np waters include the intermittently dry portions of the perennial channel below the uppermost point of perennial flow.	50
Type Ns	Type Ns waters are all segments of natural waters within defined channels that are not Type S, F, or Np waters. These are seasonal, non-fish-habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np water. Ns waters must be physically connected by an aboveground channel system to a Type S, F, or Np water.	25

Source: Skamania County 2023b: 19.05.040, Table 19.05-1 and Skamania County 2020, Table 5-7.

3 Results

HDR biologists identified nineteen wetlands, fourteen streams (including the Columbia River), five deepwater habitats and six ditches along within associated buffers within or adjacent to the survey area. Delineated wetlands, waters, and their buffers are presented on Figure 4 (Appendix E). Wetland determination data forms are provided in Appendix B, wetland rating forms are provided in Appendix C, and representative photographs are provided in Appendix D. Detailed summaries of each delineated feature as well as verification plots are presented in the following sections. Total acreage of wetland and riparian stream buffer within the survey area were calculated independently and, in some areas, may overlap resulting in a conservative estimate of buffer acreages.

The field investigations were completed from west to east along the proposed Project alignment. Results and maps are arranged to begin at Hamilton Island Recreation Area below Bonneville Lock and Dam and end in the City of Stevenson. General observations of the survey area included:

- Variable topography characteristic of foothills in the Cascade Mountains.
- Hydrology largely drained southward toward the Columbia River.
- Roadways effectively impounded and/or concentrated hydrology within the survey area along the north side of the proposed alignment.

Due to an unavoidable georeferencing error, figures may show the proposed Project alignment outside roadway surfaces in some areas; however, the majority of Project activities will remain within paved areas of SR 14, Ash Lake Road, Dam Access Road and Ft. Cascades Drive and avoid nearly all wetlands, waters and associated buffers within the survey area.

3.1 Wetlands

HDR biologists estimated and delineated seventeen wetlands within or adjacent to the survey area using a combination of the USACE standard three-parameter approach (Appendix A) and alternative methods based on guidance from the Manual and Regional Supplement (Section 2.4.1). Summary information related to all wetland observations is presented in Table 31, within detailed wetland tables presented in this section and on wetland determination data forms presented in Appendix B.

Wetlands were observed throughout the alignment, primarily associated with roadway cut slopes adjacent to the west bound traffic lanes of Ft. Cascades Drive, SR 14 and Ash Lake Road. Most delineated wetlands are depressional wetlands; slope and riverine wetlands were also observed (Table 31). Vegetation classes were mainly emergent with some shrub and forested communities.

Wetland 1 through Wetland 4 were considered Category I wetlands due to overlap with known rare plant occurrences (WDNR 2023b).

Wetland preliminary jurisdictional determinations were made using 33 Code of Federal Regulations (CFR) Part 328 for USACE and the Water Pollution Control Act (90.48 RCW) and the Shoreline Management Act of 1971 (90.58 RCW) for Ecology.

Table 3-1. Summary of Wetlands in and adjacent to the Survey Area

Wetland Name	Total Wetland Size (acres)	Wetland Size in Survey Area (acres)	HGM Class[a]	Cowardin[b]	Local Jurisdiction	WRIA	Ecology Rating[c]	Land Use Intensity	Water Quality Score	Hydrologic Score	Habitat Score	Wetland Buffer Width (ft)[d]	Sample Points	Figure 4 Reference	Photo Points	USACE PJD	Ecology PJD	Wetland Description and Functions Summary Table
Wetland 1	0.07	0.02	Depressional	PEM/PFO1	Skamania County	28	I	Low	6	6	7	100	W1-P1 (W) W1-P2 (U)	Page 1	2, 3	Yes	Yes	Table 3-2
Wetland 2	0.04	0.003	Depressional	PEM1	Skamania County	28	I	Low	7	7	7	100	W2-P1 (W) W2-P2 (U) W2-P3 (W) W2-P4 (U)	Page 2	3, 4	Yes	Yes	Table 3-3
Wetland 3	0.03	0	Depressional	PSS1	Skamania County	28	I	Low	7	6	7	100	W3-P1 (W) W3-P2 (U)	Page 4	11	Yes	Yes	Table 3-4
Wetland 4	0.21	0.12	Depressional	PEM/PFO1	Skamania County/ City of North Bonneville	28	I	Low	7	7	7	100 and110	W4-P1 (W) W4-P2 (U) W4-P3 (W) W4-P4 (U)	Page 4	12, 13	Yes	Yes	Table 3-5
Wetland 5	0.14	0	Depressional	PEM/PFO1	City of North Bonneville	28	II	High	7	8	7	220	N/A	Page 11	16	Yes	Yes	Table 3-6
Wetland 6	0.18	0	Depressional	PEM1	Skamania County/ City of North Bonneville	28	II	High	6	7	7	220	N/A	Page 12	17	Yes	Yes	Table 3-7
Wetland 7	<0.01	<0.01	Depressional	PEM1	City of North Bonneville	29	III	High	7	6	5	120	N/A	Page 15	18	No	Yes	Table 3-8
Wetland 8	<0.01	<0.01	Depressional	PEM1	City of North Bonneville	29	III	High	7	6	6	135	N/A	Page 19	19	No	Yes	Table 3-9
Wetland 9	0.11	0.06	Riverine	PFO1	Skamania County	29	II	High	7	7	8	100	W9-P1 (U) W9-P2 (W) W9-P3 (W) W9-94 (U)	Page 20	24, 25	Yes	Yes	Table 3-10
Wetland 10	0.22	0.02	Depressional	PFO1	Skamania County	29	II	High	7	7	7	100	W10-P1 (W) W10-P2 (U)	Page 27	34, 35	Yes	Yes	Table 3-11
Wetland 11	4.21	<0.01	Depressional	PEM1	Skamania County	29	II	High	6	6	8	100	W11-P1 (W) W11-P2 (U)	Page 28	40	Yes	Yes	Table 3-12
Wetland 12	<0.01	<0.01	Depressional	PEM1	Skamania County	29	III	High	6	6	7	50	W12-P1 (W) W12-P2 (U)	Page 29	46	Yes	Yes	Table 3-13
Wetland 13	<0.01	<0.01	Slope	PEM1E	Skamania County	29	III	High	6	5	8	50	W13-P1 (W) W13-P2 (U)	Page 30	48,	Yes	Yes	Table 3-14

Wetland Name	Total Wetland Size (acres)	Wetland Size in Survey Area (acres)	HGM Class[a]	Cowardin[b]	Local Jurisdiction	WRIA	Ecology Rating[c]	Land Use Intensity	Water Quality Score	Hydrologic Score	Habitat Score	Wetland Buffer Width (ft)[d]	Sample Points	Figure 4 Reference	Photo Points	USACE PJD	Ecology PJD	Wetland Description and Functions Summary Table
Wetland 14	0.06	0	Slope	PEM/PFO1	Skamania County	29	II	High	7	6	8	100	W14-P1 (W) W14-P2 (U)	Page 30	50	Yes	Yes	Table 3-15
Wetland 15	2.75	0.05	Slope	PEM/PFO1	Skamania County	29	II	High	7	7	7	100	W15-P1 (W) W15-P2 (U)	Page 30	51	Yes	Yes	Table 3-16
Wetland 16	0.03	0.03	Depressional	PEM1	Skamania County	29	III	High	7	7	5	50	W16-P1 (W) W16-P2 (U) W16-P3 (W) W16-P4 (U)	Page 31	54	Yes	Yes	Table 3-17
Wetland 17	0.05	0.05	Depressional	PEM1	Skamania County/ City of Stevenson	29	III	High	7	7	4	50 and 75	W17-P1 (U) W17-P2 (W)	Page 31 and Page 32	55-57	Yes	Yes	Table 3-18
Wetland 18	0.14	0.13	Depressional	PEM/PSS1	Skamania County/ City of Stevenson	29	II	High	7	8	7	200 and 150	W18-P1 (W) W18-P2 (U) W18-P3 (W) W18-P4 (U)	Page 31 and Page 32	58-62	Yes	Yes	Table 3-19
Wetland 19	0.03	<0.01	Depressional	PEM1	Skamania County	29	III	High	7	6	6	50	W19-P1 (W) W19-P2 (U)	Page 27	36-38	Yes	Yes	Table 3-20

[a] Hydrogeomorphic classifications according to *A Hydrogeomorphic Classification of Wetlands* (Brinson 1993).
[b] Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979). PEM = Palustrine Emergent, PSS = Palustrine Scrub/Shrub, PFO = Palustrine Forested
[c] Washington State Wetland Rating System for Western Washington (Hruby & Yahnke 2023).
[d] City of North Bonneville 2015, 18.13.100; City of Steveson 2024, 19.03.040; Skamania County 2023b, 21.10.070.
HGM = Hydrogeomorphic; WRIA = Washington Water Resource Inventory Area; PJD = preliminary jurisdictional determination

3.1.1 Wetland 1

Table 3-2. Wetland 1 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 1 (Photos 2a and 2b) and its buffer (Photos 3a and 3b) occur within survey area. Soils and subsurface hydrology were not evaluated within the Hamilton Island Recreation Area "No Dig" zone. Wetland 1 was distinguished from uplands based on the presence of hydrophytic vegetation, observations of surface hydrology, topographic position on the landscape and additional desktop resources (Section 2.4.1). Wetland 1 is a depressional, palustrine emergent and palustrine/forested wetland with persistent vegetation (PEM/PFO1) and is likely saturated at all times outside of the dry summer months in years with normal rainfall (PEM/PFO1).
Dominant Vegetation	Dominant species in the wetland include common rush (*Juncus effusus*, FACW), black cottonwood (*Populus balsamifera*, FAC), and Himalayan blackberry (FAC). Vegetation observed in Wetland 1 meets criteria for hydrophytic wetland vegetation.
Soils	Soils in Wetland 1 are mapped as Arents, 0 to 5 percent slopes. This wetland occurs in the "No Dig" zone of Hamilton Island Recreation Area; hydric soils are assumed based on the presence of hydrophytic vegetation and wetland hydrology.
Hydrology	This wetland is situated in a depression with an outlet to the south that discharges to the Columbia River via Wetland 2 and Ditch 1. Wetland hydrology inputs include surface runoff from precipitation and a high groundwater table from hills north of the site. Primary hydrologic indicators include surface water (A1)). Secondary hydrology indicators include geomorphic position (D2) and FAC-neutral test (D5).

Table 3-2. Wetland 1 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Washington Department of Natural Resources (WDNR) maps known occurrences of the rare plants, western ladies' tresses and Columbian yellowcress are mapped within the wetland boundary; therefore, the wetland meets the criteria for a Wetland of High Conservation Value and is consider a Category I wetland. The functional assessment rated Wetland 1 as a Category III wetland due to moderate water quality (6), moderate hydrology function (6), and moderate habitat function (7). Wetland 1 scored 19 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023). Category I wetland buffer was applied based on special characteristics of wetland (e.g. WHCV).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with an intermittently flowing outlet and persistent and ungrazed plants of 95 percent of the area. It has low opportunity to perform the function because less than 10 percent of the area within 150 feet includes land uses that generate excessive runoff. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for total dissolved gas, temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a depressional wetland with an intermittently flowing outlet, and ponding of 0.5 feet to less than 2 feet. It has low opportunity to perform the function because less than 10 percent of the area within 150 feet of the wetland generates excess runoff. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 1 has two vegetation structures, two hydroperiods, moderate plant diversity, moderate interspersion, and presence of habitat features, which contribute to a low habitat site potential. It is located within a landscape that has a high potential to support the habitat functions due to a high degree of connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats and is a wetland of high conservation value.

3.1.2 Wetland 2

Table 3-3. Wetland 2 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 2 (Photos 4a and 4b) and its buffer (Photos 3a and 3b) occur within survey area. Soils and subsurface hydrology were not evaluated within the recreation area "No Dig" zone. Wetland 2 was distinguished from uplands based on the presence of hydrophytic vegetation, observations of surface hydrology, topographic position on the landscape and additional desktop resources (Section 2.4.1). Wetland 2 is a depressional, palustrine emergent wetland with persistent vegetation (PEM1) and is likely seasonally flooded in years with normal rainfall (PEM1).
Dominant Vegetation	Dominant species in the wetland include common rush (FACW), Dudley's rush (*Juncus dudleyi*, FAC), rough bentgrass (*Agrostis scabra*, FAC), and unidentified bluegrass species (*Poa spp.*, FAC). Vegetation observed in Wetland 1 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 2 are mapped as Arents, 0 to 5 percent slopes. This wetland occurs in the "No Dig" zone of Hamilton Island Recreation Area; hydric soils are assumed based on the presence of hydrophytic vegetation and wetland hydrology.
Hydrology	This wetland is situated in a depression with a ditched outlet to the east (Ditch 1) that discharges to the Columbia River. Hydrology inputs are from precipitation runoff from hills to the north and northwest, and high groundwater table. Surface water (A1) of 8 inches in depth was the primary indicator of wetland hydrology observed. Secondary hydrology indicators include geomorphic position (D2) and FAC-neutral test (D5).

Table 3-3. Wetland 2 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Washington Department of Natural Resources (WDNR) maps known occurrences of a rare plant, western ladies' tresses within the wetland boundary; therefore, the wetland meets the criteria for a Wetland of High Conservation Value and is consider a Category I wetland. The functional assessment rated Wetland 2 as a Category II wetland based on functions of moderate water quality (7), moderate hydrology function (7), and moderate habitat function (7). Wetland 2 scored 21 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023). Category I wetland buffer was applied based on special characteristic of wetland (e.g. WHCV).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with an intermittently flowing outlet and persistent and ungrazed plants of 95 percent of the area. It has moderate opportunity to perform the function because 10 percent of the area within 150 feet includes land uses that generate excessive runoff. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for total dissolved gas, temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a depressional wetland with an intermittently flowing outlet, and ponding of 0.5 feet to less than 2 feet. It has moderate opportunity to perform the function because the wetland unit receives stormwater discharge. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 2 has one vegetation structure, two hydroperiods, moderate plant diversity, and moderate interspersion, which contributes to a low habitat potential. It is located within a landscape that has a high potential to support the habitat functions. due to a high degree of connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats and is a wetland of high conservation value.

3.1.3 Wetland 3

Table 3-4. Wetland 3 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	The buffer to Wetland 3 occurs within the Project survey area. Soils and subsurface hydrology were not evaluated within the recreation area "No Dig" zone. This wetland was distinguished from uplands based on presence of hydrophytic vegetation, observations of surface hydrology, topographic breaks in the landscape and additional desktop resources (Section 2.4.1) (Photo 11). Wetland 3 is a depressional, palustrine scrub/shrub wetland with persistent vegetation (PSS1) and is likely seasonally flooded in years with normal rainfall.
Dominant Vegetation	Dominant species in the wetland include red alder (FAC), Himalayan blackberry (FAC), and an unidentified willow species (*Salix spp.*, FAC). Vegetation observed in Wetland 3 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 3 are mapped as Arents, 0 to 5 percent slopes. This wetland occurs in the "No Dig" zone of Hamilton Island Recreation Area; hydric soils are assumed based on the presence of hydrophytic vegetation and wetland hydrology.
Hydrology	This wetland is situated in a depression with a central drain outlet. Hydrology inputs are from precipitation coming from hills to the west, and a high groundwater table. Hydrology is assumed to discharge via a series of culverts to an NWI-mapped wetland complex to the east. Surface water (A1) of 3 inches in depth was the primary indicator of wetland hydrology observed. Secondary hydrology indicators include water-stained leaves (B9) and geomorphic position (D2).

Wetland Functions Summary	
Rationale for Local Rating	Washington Department of Natural Resources (WDNR) maps known occurrences of the rare plant, western ladies' tresses, within the wetland boundary; therefore, the wetland meets the criteria for a Wetland of High Conservation Value and is consider a Category I wetland. The functional assessment rated Wetland 3 as a Category II wetland based on functions of moderate water quality (7), moderate hydrology function (6), and moderate habitat function (7). Wetland 3 scored 20 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023). Category I wetland buffer was applied based on special characteristic of wetland (e.g. WHCV).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with an intermittently flowing outlet and persistent and ungrazed plants of 95 percent of the area. It has moderate opportunity to perform the function because pollutants coming into the wetland from adjacent roadways. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for total dissolved gas, temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a depressional wetland with an intermittently flowing outlet, and ponding of 0.5 feet to less than 2 feet. It has low opportunity to perform the function, but is of high value to society due to flooding problems that occur downstream.
Habitat	Wetland 3 has two vegetation structures, two hydroperiods, moderate plant diversity, moderate interspersion, and presence of habitat features, which contributes to a low habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to a high degree of connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats and is a wetland of high conservation value.

3.1.4 Wetland 4

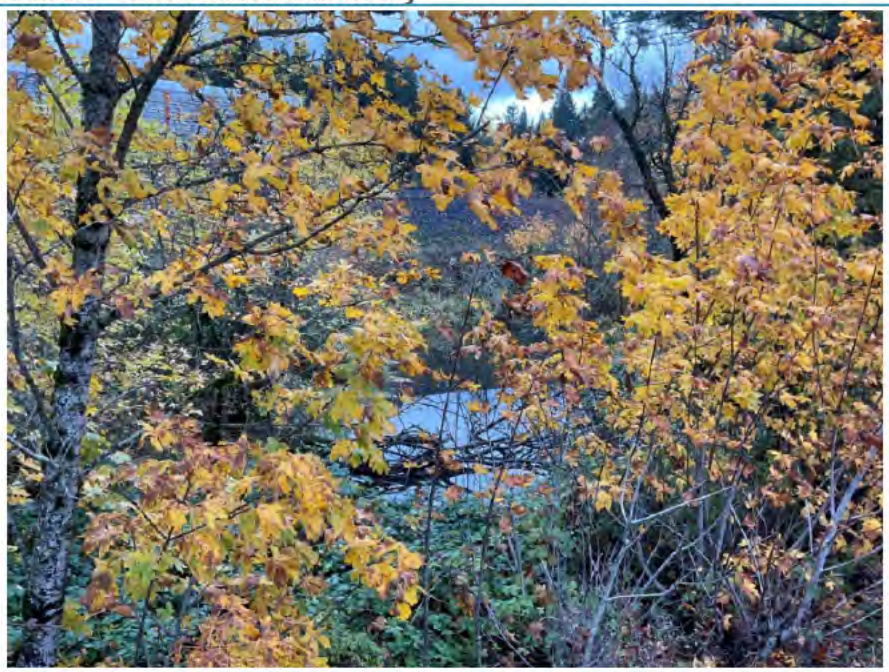
Table 3-5. Wetland 4 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 4 and its buffer occur within the survey area. Soils and subsurface hydrology were not evaluated within the recreation area "No Dig" zone. Wetland 4 was distinguished from uplands based on presence of hydrophytic vegetation, observations of surface hydrology, topographic breaks in the landscape, and additional desktop resources (Section 2.4.1) (Photos 12 and 13). Wetland 4 is a depressional, palustrine emergent and forested wetland with persistent vegetation (PEM/FO1) and is likely seasonally flooded or saturated in years with normal rainfall.
Dominant Vegetation	Dominant species in the forested portions of the wetland include black cottonwood (FAC), tall fescue (*Schedonorus arundinaceus*, FAC), an unidentified bentgrass species (*Agrostis spp.*, FAC), bird's-foot trefoil (*Lotus corniculatus*, FAC) and Himalayan blackberry (FAC). Emergent vegetation was predominantly reed canarygrass (FACW) and Himalayan blackberry. Vegetation in Wetland 4 meets the dominance test indicator for hydrophytic vegetation.
Soils	Soils in Wetland 4 are mapped as Arents, 0 to 5 percent slopes. This wetland occurs in the "No Dig" zone of Hamilton Island Recreation Area; hydric soils are assumed based on the presence of hydrophytic vegetation and wetland hydrology.
Hydrology	This wetland is situated in a narrow depression and receives hydrology inputs from Stream 1 and precipitation runoff from hills upslope. Stream 1 discharges to an NWI-mapped wetland complex to the east. Surface water (A1) ranging in depth from 2 to 9 inches was the primary indicator of wetland hydrology observed. Secondary hydrology indicators include water-stained leaves (B9), drainage patters (B10) and geomorphic position (D2).

Table 3-5. Wetland 4 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Washington Department of Natural Resources (WDNR) maps known occurrences of the rare plant, western ladies' tresses, within the wetland boundary; therefore, the wetland meets the criteria for a Wetland of High Conservation Value and is consider a Category I wetland. The functional assessment rated Wetland 4 as a Category II wetland based on functions of moderate water quality (7), moderate hydrology function (7), and moderate habitat function (7). Wetland 4 scored 21 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023). Category I wetland buffer was applied based on special characteristic of wetland (e.g. WHCV).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with an intermittently flowing outlet, and persistent plants over 50 percent of the area. It has moderate opportunity to perform the function because of the adjacent roadway. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for total dissolved gas, temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a depressional wetland with an intermittently flowing outlet, and ponding of 0.5 feet to less than 2 feet. It has a moderate opportunity to perform the function because of the adjacent roadway. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 4 has two vegetation structures, two hydroperiods, moderate plant diversity, low interspersion, and presence of habitat features, which contributes to a low habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to a high degree of connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats and is a wetland of high conservation value.

3.1.5 Wetland 5

Table 3-6. Wetland 5 – Information Summary



Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	The buffer to Wetland 5 occurs within the Project survey area. No property access was granted to complete a formal delineation; no wetland determination data forms were developed for this site. This wetland was observed, and conditions documented from SR 14 right-of-way (Photo 16). The boundary for Wetland 5 was estimating using field observations, online agency resources, topographic contours and best professional judgement (Section 2.4.1). Wetland 5 is a depressional, palustrine emergent and palustrine forested wetland with persistent vegetation (PEM/FO1) that likely maintains surface water year-round in years with normal rainfall.
Dominant Vegetation	Dominant species in the forested portions of the wetland include red alder (FAC) and Himalayan blackberry (FAC). Fringe emergent vegetation is predominantly reed canarygrass (FACW) and Himalayan blackberry. Upland areas are defined by a rapid rise in elevation and steep slopes surrounding the depression. These areas are dominated by Douglas fir (FACU), bigleaf maple (*Acer macrophyllum*, FACU) and Himalayan blackberry with a few dispersed understory shrubs not able to be identified during the survey. Wetland 5 meets the dominance test for hydrophytic vegetation.
Soils	Soils in Wetland 5 are mapped as Steever stony clay loam 2 to 30 percent slopes. Property access was not granted for survey; hydric soils are assumed based on the presence of hydrophytic vegetation and wetland hydrology.
Hydrology	This wetland is situated in a depression roughly 140 feet wide and 200 feet long. Hydrology inputs are assumed to be primarily high ground water table and seepage associated with Bass Lake located to the north but physically separated by railroad fill; no culvert or other obvious surface water connection to the lake were observed at the time of the survey. Surface water was estimated to be 2-4 feet deep and appears to be perennial based on current and historic aerial imagery. Wetland 5 meets the primary hydrology indicators for surface water (A1). In addition, water marks (B1) were observed on large, downed wood within the wetland and inundation was visible on aerial imagery (B7). One secondary hydrology indicator for geomorphic position (D2) is met.

Table 3-6. Wetland 5 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	The functional assessment rated Wetland 5 as a Category II wetland based on functions of moderate water quality (7), high hydrology function (8), and moderate habitat function (7). Wetland 5 scored 22 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with no surface water outlet, and persistent plants over 50 percent of the area. It has a moderate opportunity to perform the function because of the adjacent railroad and roadway. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for total dissolved gas, temperature and dioxin.
Hydrologic	The wetland has high potential to reduce flooding and erosion because it is a depressional wetland with no surface water outlet, and ponding of more than 3 feet. It has a moderate opportunity to perform the function because more than 10 percent of the area within 150 feet of the wetland generates excess runoff. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 5 has three vegetation structures, three hydroperiods, moderate plant diversity, high interspersion, and presence of habitat features, which contributes to a moderate habitat potential. It is located within a landscape that has a moderate potential to support the habitat functions due to a moderate degree of connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats.

3.1.6 Wetland 6

Table 3-7. Wetland 6 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	The buffer to Wetland 6 occurs within the Project survey area. No property access was granted to complete a formal delineation; no wetland determination data forms were developed for this site. Wetland 6 was observed, and conditions documented from SR 14 right-of-way (Photo 17). The boundary for this wetland was estimated using field observations, current and historic imagery, online agency resources, topographic contours and best professional judgement (Section 2.4.1). Wetland 6 is a depressional, palustrine emergent wetland with persistent vegetation (PEM1) and likely maintains surface water year-round in years with normal rainfall.
Dominant Vegetation	Dominant species along the wetland fringe include reed canarygrass (FACW) and Himalayan blackberry (FAC). Dispersed occurrences of small red alder (FAC) and bigleaf maple (FACU) were observed along wetland boundary. Upland areas are defined by a rise in topography surrounding the depression and a change in vegetation dominated by Douglas fir (FACU), bigleaf maple (FACU), Oregon white oak *(Quercus garryana*, FACU) and Himalayan blackberry. Wetland 6 meets the dominance test indicator for hydrophytic vegetation.
Soils	Soils in Wetland 6 are mapped as Steever stony clay loam 2 to 30 percent slopes. Property access was not granted for survey; hydric soils are assumed based on the presence of hydrophytic vegetation and wetland hydrology.
Hydrology	This wetland is situated in a depression roughly 140 feet wide and 160 feet long. A large concrete box culvert approximately 40 feet in length and 20 feet in height was observed beneath the railroad fill north of the wetland (Photo 17). It is assumed the culvert creates a direct surface water connection to Bass Lake. Hydrology inputs are assumed to be primarily from surface water flow from Bass Lake Surface and appeared to be 4-6 feet deep. Wetland 6 meets primary hydrology indicators for surface water (A1) and visible inundation on current and historic aerial imagery (B7). One secondary hydrology indicator for geomorphic position (D2) is met.

Table 3-7. Wetland 6 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	The functional assessment rated Wetland 6 as a Category II wetland based on functions of moderate water quality (6), moderate hydrology function (7), and moderate habitat function (7). Wetland 6 scored 20 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has low potential to improve water quality as a depressional wetland with an intermittently flowing outlet, and persistent ungrazed plants over 10 percent of the area. It has a moderate opportunity to perform the function because of the adjacent railroad and roadway. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for total dissolved gas, temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a depressional wetland with an intermittently flowing outlet, and ponding of more than 3ft. It has a moderate opportunity to perform the function because the wetland receives stormwater discharges and more than 10 percent of the area within 150 feet of the wetland generates excess runoff. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 6 has two vegetation structures, three hydroperiods, moderate plant diversity, moderate interspersion, and presence of habitat features, which contributes to a moderate habitat potential. It is located within a landscape that has moderate potential to support the habitat functions due to the presence and connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats and provides habitat to the state listed northwestern pond turtle (*Actinemys* marmorata) (WDFW 2023b)

3.1.7 Wetland 7

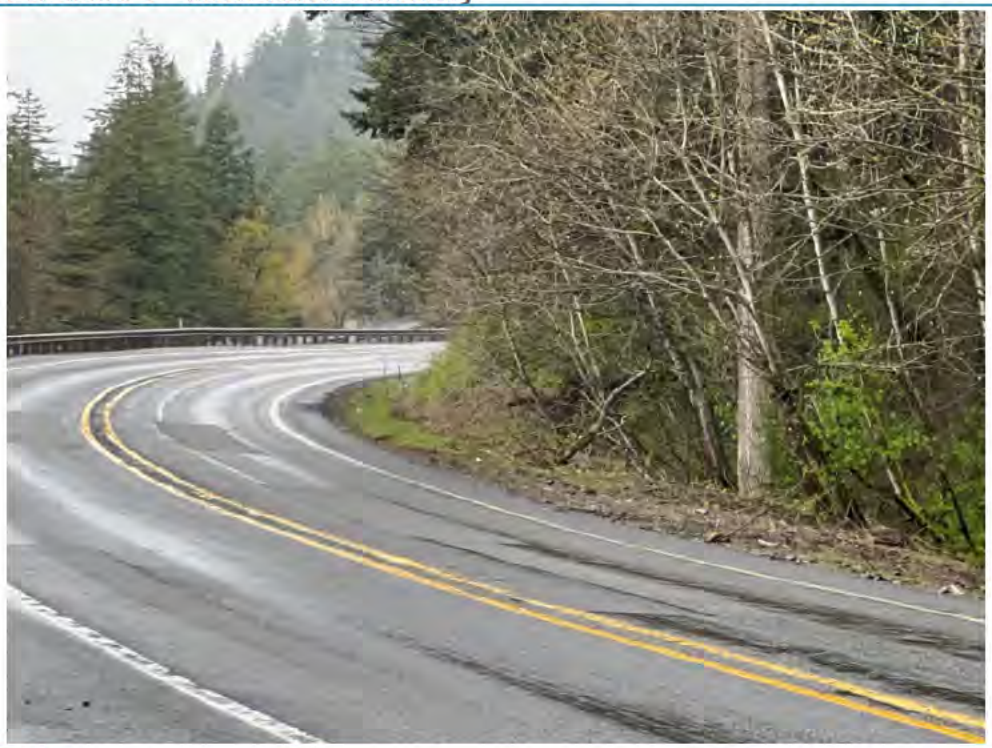
Table 3-8. Wetland 7 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 7 and its buffer occur within the Project survey area. This wetland was not formally delineated due to safety concerns associated with the proximity to SR 14 travel lanes. This wetland was observed, and conditions documented from SR 14 right-of-way (Photo 18). The boundary for this wetland was estimated using field observations, current and historic imagery, online agency resources, topographic contours, and best professional judgement (Section 2.4.1). Wetland 7 is a small palustrine emergent wetland formed at the toe of a cut slope in a closed roadside ditch north of SR 14. This wetland has persistent wetland vegetation (PEM1) and is likely seasonally saturated or flooded during years of normal rainfall.
Dominant Vegetation	Dominant wetland species include scouring rush horsetail (*Equisetum hyemale*, FACW) and broadleaf cattail (OBL). Upland areas are defined by a steep roadway cut slope to the north and elevated roadbed to the south. Upland vegetation was comprised of grasses and common upland weedy species. Wetland 7 is assumed to meet the dominance test indicator for hydrophytic vegetation.
Soils	Soils in Wetland 7 are mapped as Steever stony clay loam 30 to 65 percent slopes. No soil sample plot was established due to safety issues; hydric soils are assumed based on the presence of hydrophytic vegetation and wetland hydrology.
Hydrology	This wetland is situated in a shallow roadside ditch. Hydrology inputs are likely received from precipitation runoff from the adjacent roadway and hills upslope. No outlet was observed at the time of the survey and hydrology is assumed to infiltrate on site. No surface water was observed during the survey but is visible on recent aerial images of the area. Two secondary hydrology indicators for visible saturation on imagery (C9) and geomorphic position (D2) are met.

Table 3-8. Wetland 7 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	The functional assessment rated Wetland 7 as a Category III wetland based on functions of moderate water quality (7), moderate hydrology function (6), and low habitat function (5). Wetland 7 scored 18 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with no surface water outlet, and persistent plants over 95 percent of the area. It has a moderate opportunity to perform the function because of the adjacent roadway. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for total dissolved gas, temperature and dioxin.
Hydrologic	The wetland has low potential to reduce flooding and erosion because it is a depressional wetland with less than 6 inches of ponding. It has a moderate opportunity to perform the function because the wetland unit receives stormwater discharges and more than 10 percent of the area within 150 feet of the wetland generates excess pollution and runoff. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 7 has one vegetation structure, two hydroperiods, low plant diversity, low interspersion, and no presence of habitat features, which contributes to a low habitat potential. It is located within a landscape that has moderate potential to support the habitat functions due to the presence and connectivity to undisturbed habitat. This function has moderate value to society because the wetland is in proximity to a priority habitat.

3.1.8 Wetland 8

Table 3-9. Wetland 8 – Information Summary



Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 8 and the buffer occur within the Project survey area. This was not formally delineated due to safety concerns associated with the proximity to SR 14 travel lanes. This wetland was observed, and conditions documented from SR 14 right-of-way (Photo 19). The boundary for this wetland was estimated using field observations, current and historic imagery, online agency resources, topographic contours and best professional judgement (Section 2.4.1). A small palustrine emergent wetland, Wetland 8 formed at the toe of a cut slope in a closed roadside ditch north of SR 14. This wetland has persistent wetland vegetation (PEM1) and is likely seasonally saturated or flooded during years of normal rainfall.
Dominant Vegetation	Dominant wetland species include field horsetail (FAC), common rush (FACW) and broadleaf cattail (OBL). Upland areas are defined by a steep roadway cut slope to the north and elevated roadbed to the south. Upland vegetation was comprised of grasses and common upland weedy species. Wetland 8 is assumed to meet the dominance test indicator for hydrophytic vegetation.
Soils	Soils in Wetland 8 are mapped as Bonneville stony sandy loam. No soil sample plot was established due to safety issues; hydric soils are assumed based on the presence of hydrophytic vegetation and wetland hydrology.
Hydrology	This wetland is situated in a shallow roadside ditch. Hydrology inputs are likely received from precipitation runoff from the adjacent roadway and hills upslope. No outlet was observed at the time of the survey and hydrology is assumed to infiltrate on site. No surface water was observed during the survey but is visible on recent aerial images of the area. Two secondary hydrology indicators for visible saturation on imagery (C9) and geomorphic position (D2) are met.

Table 3-9. Wetland 8 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	The functional assessment rated Wetland 8 as a Category III wetland based on functions of moderate water quality (7), moderate hydrology function (6), and moderate habitat function (6). Wetland 8 scored 19 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with no surface water outlet, and persistent plants over 95 percent of the area. It has a moderate opportunity to perform the function because of the adjacent roadway. This function is of high value to society because the wetland is in a basin with a total maximum daily load (TMDL) for total dissolved gas, temperature and dioxin.
Hydrologic	The wetland has a low potential to reduce flooding and erosion because it is a depressional wetland with less than 6 inches of ponded water. It has a moderate opportunity to perform the function because the wetland receives stormwater discharges and more than 10 percent of the area within 150 feet of the wetland generates excess pollution and runoff. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 8 has one vegetation structure, two hydroperiods, low plant diversity, no interspersion, and no presence of habitat features, which contributes to a low habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to a high degree of connectivity to undisturbed habitat. This function has moderate value to society because the wetland is in proximity to apriority habitat.

3.1.9 Wetland 9

Table 3-10. Wetland 9 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 9 and the buffer occur within the Project survey area. The eastern boundary of Wetland 9 occurs in an area of significantly disturbed vegetation and soil resulting from a recently buried power line that occurred roughly 8-10 months prior to wetland survey (Photo 24). Wetland was delineated using alternative methodology outlined in the U.S. Army Corps of Engineers' Manual (1987) and Regional Supplement (2010), desktop resources and best professional judgement (Section 2.4.1). This wetland has persistent vegetation (PFO1) and is likely seasonally saturated or flooded during years of normal rainfall.
Dominant Vegetation	Wetland 9 is classified as a palustrine, forested wetland (Photo 25). A small section on the eastern side is classified as palustrine emergent wetland. The utility work removed all vegetation and the area within the wetland boundary is currently being reestablished mainly with reed canarygrass (FACW) and Himalayan blackberry (FAC). Recent aerial and ground-level images indicate the same dominant species as well as broadleaf cattail (OBL) occurred within the wetland boundary prior to the disturbance. Dominant species in the undisturbed, forested portion of the wetland include water parsley (*Oenanthe sarmentosa*, OBL), field horsetail (FAC), red osier dogwood (*Cornus alba*, FACW), Himalayan blackberry (FAC), red alder (FAC), and Oregon ash (*Fraxinus latifolia,* FACW). Vegetation observed in Wetland 9 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 9 are mapped as Steever stony clay loam, 30 to 65 percent slopes. Multiple soil horizons at the eastern boundary were removed during restoration work. Soils lack native parent material and are primarily comprised of soil and gravel fill material; methods for problematic hydric soils used to determine wetland boundary and are detailed in Section 2.4.1. Soils outside the influence of the restoration work are high in organic matter; the hydric soil indicator for Loamy Mucky Mineral (F1) is met.

Table 3-10. Wetland 9 – Information Summary	
Hydrology	Wetland 9 is situated along Stream 3 and in a depressional area where the main source of hydrology is overbank and hyporheic flow from Stream 3, and contributing hydrology inputs including precipitation runoff from hills to the north and a high groundwater table. Hydrology is assumed to discharge to Stream 3 during periods of high water. Primary hydrology indicators for wetland hydrology include high water table (A2), and saturation (A3). Secondary indicators of wetland hydrology present are drainage patterns (B10) and geomorphic position (D2).
Wetland Functions Summary	
Rationale for Local Rating	Wetland 9 is rated as a Category II wetland based on functions of moderate water quality (7), moderate hydrology function (7), and high habitat function (8). Wetland 9 scored 22 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023). This wetland was evaluated using problematic hydric soil, and not under abnormal circumstances. The reason for this determination is that the wetland boundary remained in the same location pre and post restoration work, and the current reestablishment of vegetation within the wetland remains the same.
Water Quality	The wetland has moderate potential to improve water quality as a riverine wetland with depressions covering less than 50 percent of the wetland area, but trees and shrubs covering 33 to 66 percent of the wetland area. It has moderate opportunity to perform the function because though less than 10 percent of the area within 150 feet includes land uses that generate pollutants and the wetland receives stormwater discharges, pollutants are still present and entering the wetland from SR 14. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a riverine wetland with a low ratio of overbank storage, but a high concentration of emergent and forested plant cover. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 9 has three vegetation structures, two hydroperiods, moderate plant diversity, moderate interspersion, and presence of habitat features, which contributes to a moderate habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to a high degree of connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats.

3.1.10 Wetland 10

Table 3-11. Wetland 10 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 10 and its buffer occur within the Project survey area (Photo 34). This small wetland is located adjacent to the north of Ash Lake Road. The wetland has persistent wetland vegetation (PFO1) and is likely semi-permanently flooded (all but hot summer months) during years of normal rainfall (PFO1).
Dominant Vegetation	Wetland 10 is a palustrine forested wetland. Dominant species in the wetland include reed canarygrass (FACW), Himalayan blackberry (FAC), spreading gooseberry (*Ribes divaricatum*, FAC), red alder (FAC) and Oregon ash (FACW). Vegetation observed in Wetland 10 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 10 are mapped as Steever stony clay loam, 2 to 30 percent slopes. Soil texture are silt and clay loams. Soils within wetland meet the hydric soil indicator for redox dark surface (F6).
Hydrology	Wetland 10 is situated in a depressional area along a hill sloping down to Ashes Lake. Hydrology inputs are received from precipitation runoff from hills upslope, high ground water table and to a lesser degree, roadway runoff. Based on the relatively shallow depths observed during the months of April and November, it is assumed that surface water evaporates in the hot summer months. During periods of high water, the wetland drains via a culvert beneath Ash Lake Road to Stream 6, an ephemeral drainage that discharges to Ashes Lake (Photo 35). Wetland 10 meets primary wetland hydrology indicators for surface water (A1), high water table (A2) and saturation (A3), and secondary indicators for geomorphic position (D2) and the FAC-neutral test (D5).

Table 3-11. Wetland 10 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Wetland 10 is rated as a Category II wetland based on functions of moderate water quality (7), moderate hydrology function (7), and moderate habitat function (7). Wetland 10 scored 21 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with an intermittently flowing outlet and persistent ungrazed plants over 95 percent of the area. It has moderate opportunity to perform the function because 10 percent of the area within 150 feet includes land uses that generate pollutants and the wetland receives stormwater discharges. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a depressional wetland with an intermittently flowing outlet, and ponding water of 0.5 feet to less than 2 feet deep. It has moderate opportunity to perform the function because more than 10 percent of the area within 150 feet of the wetland generates excess runoff. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 10 has two vegetation structures, two hydroperiods, moderate plant diversity, moderate interspersion, and presence of habitat features, which contributes to a moderate habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to a high degree of connectivity to undisturbed habitat. This function has moderate value to society because the wetland is in proximity to two priority habitats.

3.1.11 Wetland 11

Table 3-12. Wetland 11 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 11 and the buffer occur within the Project survey area (Photo 40). This wetland is located directly adjacent and north of Ash Lake Road. This wetland has persistent wetland vegetation (PEM1) and is likely seasonally saturated during years of normal rainfall (PEM1).
Dominant Vegetation	Wetland 11 is a palustrine emergent wetland. Dominant species in the wetland include jewelweed (*Impatiens capensis*, FACW), field horsetail (FAC) and vine maple (FAC). Vegetation observed in Wetland 11 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 11 are mapped as Steever stony clay loam, 2 to 30 percent slopes. Soils evaluated within the wetland meet the hydric soil indicator of redox dark surface (F6).
Hydrology	Wetland 11 is situated in a road cut along a hill sloping down to Ashes Lake. Hydrology inputs are received primarily from ponds and wetlands upslope, and high ground water table conveyed by Stream 7 to a relatively small and flat area next to Ash Lake Road where soils become saturated and the water table is high. Hydrology discharges to a culvert beneath the road to Ashes Lake. Wetland 11 meets primary wetland hydrology indicators for high water table (A2) and saturation (A3), and one secondary indicator for the FAC-neutral test (D5).

Table 3-12. Wetland 11 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Wetland 11 is rated as a Category II wetland based on functions of moderate water quality (6), moderate hydrology function (6), and high habitat function (8). Wetland 11 scored 20 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with an intermittently flowing outlet and persistent plants over 50 percent of the area, and has a low opportunity to perform the function due to minimal pollution or runoff issues upslope of this wetland. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a depressional wetland with an intermittently flowing outlet, and ponding of 0.5 feet to less than 2 feet. It has low opportunity to perform the function because the wetland does not receive stormwater discharges and less than 10 percent of the area within 150 feet of the wetland generates excess runoff. Flooding problems do occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 11 has four vegetation structures, three hydroperiods, moderate plant diversity, high interspersion, and presence of habitat features, which contributes to a moderate habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to the presence and connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats.

3.1.12 Wetland 12

Table 3-13. Wetland 12 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 12 and the wetland buffer occur within the Project survey area. This small palustrine emergent wetland formed at the toe of a cut slope in a roadside ditch adjacent to the north of Ash Lake Road. This wetland has persistent wetland vegetation (PEM1) and is likely seasonally saturated or flooded during years of normal rainfall (PEM1).
Dominant Vegetation	Vegetation within Wetland 12 is classified as palustrine emergent. Dominant species include broadleaf cattail (OBL), Queen Anne's lace (*Daucus carota,* FACU), tall fescue (FAC) and American vetch (*Vicia americana*, FAC). The dominance test and prevalence index for hydrophytic wetland vegetation are met.
Soils	Soils in Wetland 12 are mapped as Steever stony clay loam, 2 to 30 percent slopes. Soils within wetland meet the hydric soil indicator for depleted matrix (F3).
Hydrology	This wetland is situated in a slow draining roadside ditch, fed by precipitation runoff from hills upslope and Ash Lake Road (Photo 46). Hydrology drains to a culvert that discharges to Ashes Lake. Primary wetland hydrology indicators for surface water (A1), a high water table (A2), and saturation (A3) are met.

Table 3-13. Wetland 12 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Wetland 12 is rated as a Category III wetland based on functions of moderate water quality (6), moderate hydrology function (6), and moderate habitat function (7). Wetland 12 scored 19 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has low potential to improve water quality as a depressional wetland with an intermittently flowing outlet, and persistent plants over 50 percent of the area. It has moderate opportunity to perform the function because the wetland receives stormwater discharges. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for temperature and dioxin.
Hydrologic	The wetland has low potential to reduce flooding and erosion because it is a depressional wetland with an intermittently flowing outlet and less than 6 inches of ponding. It has moderate opportunity to perform the function because of its proximity to Ash Lake Road, and the wetland receives stormwater discharge. In addition, flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 12 has one vegetation structure, two hydroperiods, moderate plant diversity, low interspersion, and presence of habitat features, which contributes to a low habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to the presence and connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats.

3.1.13 Wetland 13

Table 3-14. Wetland 13 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 13 and the wetland buffer occur within the Project survey area on a narrow toe slope adjacent to Ashes Lake (Photo 48). This wetland formed along the right and left banks of Stream 10 and within a roadside ditch adjacent to the north of Ash Lake Road. This wetland has persistent wetland vegetation (PEM1) and is likely seasonally saturated or flooded during years of normal rainfall.
Dominant Vegetation	Wetland 13 is a palustrine emergent wetland. Dominant species in the wetland include annual bluegrass (*Poa annua*, FAC) and reed canarygrass (FACW). Vegetation observed in Wetland 13 meets wetland hydrophytic vegetation criteria for the dominance test and prevalence index.
Soils	Soils in Wetland 13 are mapped as Steever stony clay loam, 2 to 30 percent slopes. Soils within the wetland ditch meet the hydric soil indicator of depleted matrix (F3).
Hydrology	Hydrology is mainly attributed to inputs from Stream 10 but also precipitation runoff from hills upslope and the adjacent roadway. Wetland 13 and Stream 10 drain to a forested wetland to the west, north of Mallicott Road, and is assumed to discharge to Ashes Lake. Primary hydrology indicators are met for high water table (A2) and saturation (A3). One secondary hydrology indicator for the FAC-neutral test (D5) is met.

Table 3-14. Wetland 13 – Information Summary

Wetland Functions Summary	
Rationale for Local Rating	Wetland 13 is rated as a Category III wetland based on functions of moderate water quality (6), low hydrology function (5), and high habitat function (8). Wetland 13 scored 19 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has low potential to improve water quality as a slope wetland with a 1 to 2 percent slope, and dense uncut herbaceous plant cover over 50 percent of the area. It has moderate opportunity to perform the function because 10 percent of the area within 150 feet includes land uses that generate pollutants and the wetland receives stormwater discharges. This function is of high value to society because the wetland is in a basin with a total maximum daily load (TMDL) for temperature and dioxin.
Hydrologic	Wetland 13 has a low potential to attenuate stormwater flows due to lack of dense, uncut rigid plant cover. Less than 25% of the land use within 150 feet upslope from the wetland generates excess runoff, which contributes to a low landscape potential. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 13 has two vegetation structures, two hydroperiods, moderate plant diversity, moderate interspersion, and presence of habitat features, which contributes to a moderate habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to presence and connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats.

3.1.14 Wetland 14

Table 3-15. Wetland 14 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 14 and the wetland buffer are adjacent to the Project survey area in a depressional area roughly 30 feet below road grade of Ash Lake Road and SR 14 (Photo 50). This wetland formed at the eastern edge of and at the same topographic contour as Ashes Lake. This wetland has persistent wetland vegetation (PEM/PFO1) and is likely seasonally saturated or flooded during years of normal rainfall.
Dominant Vegetation	Wetland 14 is primarily a palustrine emergent wetland with palustrine forested components along the northern boundary. Dominant species in the wetland include reed canarygrass (FACW), broadleaf cattail (OBL), Himalayan blackberry (FAC) and red alder (FAC). Vegetation observed in Wetland 14 meets wetland hydrophytic vegetation criteria for the dominance test.
Soils	Soils in Wetland 14 are mapped as Arents, 0 to 5 percent slopes. Soils within the sample plot were somewhat mucky with organic material in advanced stages of decomposition. Hydric soil indicators for loamy mucky mineral soil (F1) and redox dark surface (F6) are met.
Hydrology	The wetland is subject to hydrologic forces from Ashes Lake and the Columbia River. Hydrology is also attributed to inputs from a perennial stream (Stream 11) that drains upslope wetlands (including Wetland 15), ponds and precipitation runoff from adjacent roadways. Hydrology likely drains to Stream 11 which is located at a low point within the surrounding landscape. The sample plot meets primary wetland hydrology requirements for high water table (A2), saturation (A3) and hydrogen sulfide odor (C1). A secondary wetland hydrology indicator for FAC-neutral test (D5) is also met.

Table 3-15. Wetland 14 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Wetland 14 is rated as a Category II wetland based on functions of moderate water quality (7), moderate hydrology function (6), and high habitat function (8). Wetland 14 scored 21 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a slope wetland with 2 to 5 percent slopes and dense uncut herbaceous plants over 50 percent of the area. It has moderate opportunity to perform the function because 10 percent of the area within 150 feet includes land uses that generate pollutants and the wetland receives stormwater discharges. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for bacteria and dioxin.
Hydrologic	Wetland 14 has a low potential to attenuate stormwater flows due to lack of dense, uncut rigid plant cover. More than 25% of the land use within 150 feet upslope from the wetland generates excess runoff, which contributes to a moderate landscape potential. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 14 has three vegetation structures, two hydroperiods, moderate plant diversity, moderate interspersion, and presence of habitat features, which contributes to a high habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to presence and connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats.

3.1.15 Wetland 15

Table 3-16. Wetland 15 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 15 and the wetland buffer occur within the Project survey area in a depressional area roughly 30 feet below road grade of Ash Lake Road and SR 14. Wetland 15 has persistent vegetation (PEM/PFO1) and is likely seasonally saturated or flooded during years of normal rainfall.
Dominant Vegetation	Wetland 15 is primarily a palustrine emergent wetland with palustrine forested components along the northern boundary. Dominant species in the wetland include reed canarygrass (FACW) and common rush (FACW). Vegetation observed in Wetland 15 meets criteria for hydrophytic wetland vegetation.
Soils	Soils in Wetland 15 are mapped as Steever stony clay loam, 2 to 30 percent slopes and Arents, 0 to 5 percent slopes. Soils within sample plot were somewhat mucky with organic material in advanced stages of decomposition. Hydric soil indicator for depleted matrix (F3) is met.
Hydrology	Wetland hydrology is attributed to inputs from a perennial stream (Stream 11) that drains upslope wetlands, ponds and precipitation runoff via a culvert located under Ash Lake Road (Photo 51). Hydrology likely drains to the stream which is located at a low point within the surrounding landscape. The sample plot meets primary wetland hydrology requirements for high water table (A2) and saturation (A3).

Table 3-16. Wetland 15 – Information Summary

Wetland Functions Summary	
Rationale for Local Rating	Wetland 15 is rated as a Category II wetland based on functions of moderate water quality (7), moderate hydrology function (7), and moderate habitat function (7). Wetland 15 scored 21 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a slope wetland with 2 to 5 percent slopes and dense uncut herbaceous plants over 95 percent of the area. It has moderate opportunity to perform the function because 10 percent of the area within 150 feet includes land uses that generate pollutants and the wetland receives stormwater discharges. This function is of high value to society because the wetland is in a basin with a total maximum daily load (TMDL) for bacteria and dioxin.
Hydrologic	Wetland 15 has a moderate potential to attenuate stormwater flows due to the presence of dense, uncut rigid plant cover. Additionally, more than 25% of the land use within 150 feet upslope from the wetland generates excess runoff, which contributes to a moderate landscape potential. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 15 has three vegetation structures, three hydroperiods, moderate plant diversity, high interspersion, and presence of habitat features, which contributes to a moderate habitat potential. It is located within a landscape that has a moderate potential to support the habitat functions due to a high degree of connectivity to undisturbed habitat. This function has high value to society because the wetland is in proximity to multiple priority habitats.

3.1.16 Wetland 16

Table 3-17. Wetland 16 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 16 and the wetland buffer occur within the Project survey area in a roadside ditch north of SR 14. Wetland 16 has persistent vegetation (PEM1) and is likely seasonally saturated or flooded during years of normal rainfall.
Dominant Vegetation	Wetland 16 is primarily a palustrine emergent wetland. Dominant species in the wetland include reed canarygrass (FACW), dagger leaf rush (*Juncus ensifolius*, FACW), common velvet grass (*Holcus lanatus*, FAC) and an unidentified Carex species assumed to be FACW. Non-dominant vegetation included a combination of FAC, OBL, FACW and FACU species (Photo 57). The area was also observed during the April site visit and a relatively high occurrence of mild water-pepper (*Persicaria hydropiper*, OBL) and American speedwell (*Veronica americana*, OBL) were observed as well as algal mats. Vegetation observed in Wetland 16 meets criteria for hydrophytic wetland vegetation.
Soils	Soils in Wetland 16 are mapped as Steever stony clay loam, 2 to 30 percent slopes. Soils within the wetland ditch meet the hydric soil indicators for redox dark surface (F6).
Hydrology	This wetland is situated within a roadside ditch and may discharge via Ditch 8 to an upland area during periods of heavy rainfall to the west. The primary hydrologic inputs are from precipitation runoff from hills upslope and the adjacent roadway, as well as a high groundwater table. Wetland hydrology was observed in the upland plots but is likely attributed to recent higher than normal rainfall. Hydrology within the wetland met primary indicators for surface water (A1), high water table (A2), and saturation (A3), and a secondary indicator for the FAC-neutral test.

Table 3-17. Wetland 16 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Wetland 16 is rated as a Category III wetland based on functions of moderate water quality (7), moderate hydrology function (7), and low habitat function (5). Wetland 16 scored 19 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with an intermittently flowing outlet and persistent plants over 95 percent of the area. It has moderate opportunity to perform the function because 10 percent of the area within 150 feet includes land uses that generate pollutants and the wetland receives stormwater discharges. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for temperature and dioxin.
Hydrologic	The wetland has low potential to reduce flooding and erosion because it is a depressional wetland an intermittently flowing outlet, and less than 6 inches of ponding. It has high opportunity to perform the function because the wetland receives stormwater discharges, more than 10 percent of the area within 150 feet of the wetland generates excess runoff, and more than 25% of the contributing basin of the wetland is covered with intensive land uses. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 16 has one vegetation structure, two hydroperiods, moderate plant diversity, low interspersion, and no presence of habitat features, which contributes to a low habitat potential. It is located within a landscape that has a moderate potential to support the habitat functions due to a moderate degree of undisturbed habitat within 1 kilometer. This function has moderate value to society because the wetland is in proximity to two priority habitats.

3.1.17 Wetland 17

Table 3-18. Wetland 17 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 17 and the wetland buffer occur within the Project survey area in a roadside ditch north of SR 14. Wetland 17 has persistent vegetation (PEM1) and is likely seasonally saturated or flooded during years of normal rainfall (Photo 55). Wetland 17 is bisected by SW Rock Creek Drive. Both segments of the wetland occur at roughly the same topographic contour and are connected by a culvert with similar top and bottom elevations (Photo 56), creating slow-moving, possibly bi-directional water flow conditions near the road. Topography near the east side of the wetland allows for slow drainage downslope to the east.
Dominant Vegetation	Wetland 17 is primarily a palustrine emergent wetland. Dominant species in the wetland include reed canarygrass (FACW) and common velvet grass (FAC). Forested portions of the wetland have an overstory of black cottonwood (FAC). Non-dominant wetland vegetation includes field horsetail (FAC) (Photo 57). East of SW Rock Creek Drive emergent vegetation observed within the ditch is dominated by common duckweed (*Lemna minor*, OBL), watercress (*Nasturtium officinale*, OBL), narrowleaf water plantain (*Alisma gramineum*, OBL), pond starwort (*Callitriche stagnalis*, OBL) water parsley (OBL) and American speedwell (OBL) (Photo 62). Additional species observed in this location include broadleaf cattail (OBL), reed canarygrass (FACW) and common rush (FACW) (Photo 63). Vegetation observed in Wetland 17 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 17 are mapped as Steever stony clay loam, 2 to 30 percent slopes and Arents, 0 to 5 percent slopes. Soils within the wetland ditch meet the hydric soil indicators for depleted below dark surface (A11) and depleted matrix (F3).
Hydrology	This wetland is situated within a roadside ditch that discharges to Wetland 18. The primary hydrologic inputs are from precipitation runoff from hills upslope and the adjacent roadway, as well as a high groundwater table. Wetland hydrology was observed in the upland plots but is likely attributed to recent higher than normal rainfall. Hydrology within the wetland met primary indicators for surface water (A1), high water table (A2) and saturation (A3), and a secondary indicator for the FAC-neutral test.

Table 3-18. Wetland 17 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Wetland 17 is rated as a Category III wetland based on functions of moderate water quality (7), moderate hydrology function (7), and low habitat function (4). Wetland 17 scored 18 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland an intermittently flowing outlet and persistent plants over 95 percent of the area. It has moderate opportunity to perform the function because more than 10 percent of the area within 150 feet includes land uses that generate pollutants and the wetland receives stormwater discharges. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a depressional wetland an intermittently flowing outlet, and 6 inches to less than 2 feet of ponding. It has moderate opportunity to perform the function because more than 10 percent of the area within 150 feet of the wetland generates excess runoff. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 17 has two vegetation structures, two hydroperiods, moderate plant diversity, low interspersion, and no presence of habitat features, which contributes to a low habitat potential. It is located within a landscape that has a moderate potential to support the habitat functions due to undisturbed habitat within 1 kilometer. This function has low value to society because the wetland is not located near priority habitats.

3.1.18 Wetland 18

Table 3-19. Wetland 18 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 18 and the wetland buffer occur within the Project survey and work area in a roadside ditch north of SR 14. This wetland originates from a culvert roughly 700 feet east of SW Rock Creek Drive (Photo 58) and travels within a roadside ditch to the east, where it widens prior to discharging to Stream 12 and Rock Cove (Photo 59). Wetland 18 has persistent vegetation (PEM/PSS1) and is likely semi-permanently flooded during years of normal rainfall.
Dominant Vegetation	Wetland 18 is primarily a palustrine emergent wetland with shrub/scrub components along the northern boundary. Most shrubs have recently been trimmed to the ground (Photo 60), but most had regrown short stems at the time of the survey. Dominant vegetation observed in the wetland includes Douglas' spiraea (*Spiraea douglasii*, FACW), reed canarygrass (FACW) and Oregon ash (FACW) shrubs (Photo 61). Along the northern boundary water pools in a low point on the landscape. Vegetation observed in the depressional area dominated by Pacific willow (*Salix lucida ssp. lasiandra*, FACW) shrubs and small red alder (FAC) trees (Photo 62). Vegetation observed in Wetland 18 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 18 are mapped as Arents, 0 to 5 percent slopes. Soils within wetland plots met hydric soil indicators for redox dark surface (F6) and depleted matrix (F3). Soils along the northern boundary were relatively rocky and are likely due to slough off from adjacent fill pad.
Hydrology	Wetland hydrology is primarily attributed to precipitation runoff from hills upslope and surrounding lands. This wetland is situated within a roadside ditch discharging water to the northeast, and into Rock Cove (Photo 63). Water within the wetland ditch was stagnant at the west end, flowed slowly through the middle portions and was pooled and slow moving on the east end prior to discharging to Stream 12. Water width through the ditch range from 3-15 feet wide with depths averaging between 6 and 10 inches with greater depths occurring near culvert inlets and outlets. Wetland hydrology was widest and shallowest on the east end. Three primary wetland hydrology indicators for surface water (A1), high water table (A2) and saturation (A3) and one secondary indicator for the FAC-neutral test (D5) were met.

Table 3-19. Wetland 18 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Wetland 18 is rated as a Category II wetland based on functions of moderate water quality (7), high hydrology function (8), and moderate habitat function (7). Wetland 17 scored 22 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with an intermittently flowing outlet and persistent plants over 95 percent of the area. It has moderate opportunity to perform the function because 10 percent of the area within 150 feet includes land uses that generate pollutants and the wetland receives stormwater discharges. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for temperature and dioxin.
Hydrologic	The wetland has moderate potential to reduce flooding and erosion because it is a depressional wetland with an intermittently flowing outlet, and ponding of 0.5 feet to less than 2 feet. It has high opportunity to perform the function because more than 10 percent of the area within 150 feet of the wetland generates excess runoff. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 18 has two vegetation structures, two hydroperiods, moderate plant diversity, moderate interspersion, and presence of habitat features, which contributes to a moderate habitat potential. It is located within a landscape that has a moderate potential to support the habitat functions due to a moderate degree of undisturbed habitat within 1km. This function has high value to society because the wetland is in proximity to multiple priority habitats

3.1.19 Wetland 19

Table 3-20. Wetland 19 – Information Summary

Location:	[redacted]
Wetland Delineation Summary	
Rationale for Delineation	Wetland 19 and the wetland buffer occur within the Project survey area in a depression below the road grade along the north side of Ash Lake Road. This wetland has persistent vegetation (PEM1) and is likely seasonally saturated or flooded during years of normal rainfall.
Dominant Vegetation	Wetland 19 is a palustrine emergent wetland dominated by reed canarygrass (FACW), (Photo 36 and 37). Vegetation observed in Wetland 19 meets criteria for hydrophytic wetland vegetation.
Soils	Soils in Wetland 19 are mapped as Steever stony clay loam, 2 to 30 percent slopes. No hydric soil indicators were met; soils were determined to be hydric per the problematic hydric soil procedure outlined in the Manual and Regional Supplement. This area is likely a developing wetland and hydric soil indicators are still forming. The full procedure is outlined in Section 2.4.1
Hydrology	Wetland 19 is situated in a depressional area located on a narrow terrace just upslope of Ashes Lake. Hydrology inputs are received from precipitation runoff from hills upslope and overbank flow Stream 6. Wetland 19 and Stream 6 drain via a partially blocked culvert beneath Ash Lake Road to an ephemeral drainage (Stream 6) that discharges to Ashes Lake (Photo 38). Wetland 19 meets primary wetland hydrology indicators for surface water (A1), high water table (A2) and saturation (A3), and secondary indicators for geomorphic position (D2) and the FAC-neutral test (D5).

Table 3-20. Wetland 19 – Information Summary	
Wetland Functions Summary	
Rationale for Local Rating	Wetland 19 is rated as a Category III wetland based on functions of moderate water quality (7), moderate hydrology function (6), and moderate habitat function (6). Wetland 19 scored 19 points per Ecology's Wetland Rating System (Hruby & Yahnke 2023).
Water Quality	The wetland has moderate potential to improve water quality as a depressional wetland with an intermittently flowing outlet and persistent plants over 95 percent of the area. It has moderate opportunity to perform the function because 10 percent of the area within 150 feet includes land uses that generate pollutants and the wetland receives stormwater discharges. This function is of high value to society because the wetland is located in a basin with a total maximum daily load (TMDL) for temperature and dioxin.
Hydrologic	The wetland has low potential to reduce flooding and erosion because it is a depressional wetland an intermittently flowing outlet, and less than 6 inches of ponding. It has moderate opportunity to perform the function because more than 10 percent of the area within 150 feet of the wetland generates excess runoff. Flooding problems occur downstream; therefore, performance of this function is of high value to society.
Habitat	Wetland 19 has one vegetation structure, three hydroperiods, low plant diversity, low interspersion, and no presence of habitat features, which contributes to a low habitat potential. It is located within a landscape that has a high potential to support the habitat functions due to undisturbed habitat within 1 kilometer. This function has moderate value to society because the wetland is in proximity to multiple priority habitats.

3.2 Streams

In addition to the Columbia River, HDR biologists evaluated thirteen streams within the survey area. Perennial and intermittent streams were the dominant waterbodies within the survey area. Summary details of all streams are presented in Table 3-21 and in subsequent sections. Stream photos are in Appendix D.

All streams had flow during the time of the field investigations and some had associated wetlands (Section 3.1). Hydrology is primarily attributed to upslope lakes and wetlands and the proximity of the survey area to the foothills of the Cascade Mountains where steep and varied topography contributes to stream formation.

Due to the steep topography in the area, most streams have a moderately high energy flow with well-defined bed and banks. The widths of the OHWM of delineated streams varied between approximately 1 to 7 feet. The OHWM of the Columbia River at the time of the survey was estimated to be 1,050 feet below Bonneville Lock and Dam and 4,000 feet above the dam near the City of Stevenson.

Most delineated streams flowed roughly perpendicular to the survey area and ultimately discharge to the Columbia River or its tributaries (Figure 2). All streams are considered waters of the U.S. and Washington State. The proposed Project will not affect any streams or buffers during installation.

Table 3-21 Summary of Waters in the Survey Area

Waterbody	Approx. Length in Survey Area (feet)	OHWM Width (feet)[a]	Flow Regime[b]	Tributary to	Documented Fish Use[c]	WRIA	Local Jurisdiction	Local Water Type	WDNR Water Type	Riparian Buffer Width (feet)	Figure 4 Reference	Photo Points	USACE PJD	Ecology PJD	Stream Summary Table
Columbia River	N/A	1050-4000	Perennial	Pacific Ocean	Yes	28/29	Skamania County, Cities of North Bonneville and Stevenson	S	S	150	Page 1 and Page 33	1, 65	Yes	Yes	Table 3-22
Stream 1	479	3.4	Intermittent	NWI mapped wetland complex	No	28	Skamania County, City of North Bonneville	F	Not mapped	100	Page 4	9, 10	Yes	Yes	Table 3-23
Stream 2	77	2.5	Intermittent	Columbia River	No	29	Skamania County	F	N	100	Page 20	21	Yes	Yes	Table 3-24
Stream 3	237	2.8	Intermittent	Columbia River	No	29	Skamania County	F	N	100	Page 20	22-24	Yes	Yes	Table 3-25
Stream 4	15	2.5	Intermittent	Ashes Lake	No	29	Skamania County	F	N	100	Page 26	31	Yes	Yes	Table 3-26
Stream 5	21	7.5	Perennial	Ashes Lake	Yes	29	Skamania County	F	F	100	Page 27	32, 33	Yes	Yes	Table 3-27
Stream 6	14	2.0	Ephemeral	Ashes Lake	No	29	Skamania County	Ns	Not mapped	25	Page 27	38, 39	Yes	Yes	Table 3-28
Stream 7	22	1.4	Intermittent	Ashes Lake	No	29	Skamania County	F	Not mapped	100	Page 28	40, 41	Yes	Yes	Table 3-29
Stream 8	24	7.3	Perennial	Ashes Lake	Yes	29	Skamania County	F	F	100	Page 29	44, 45	Yes	Yes	Table 3-30
Stream 9	18	7.2	Intermittent	Ashes Lake	No	29	Skamania County	Ns	Not mapped	25	Page 29	47	Yes	Yes	Table 3-31
Stream 10	260	1.2	Intermittent	Wetland D	No	29	Skamania County	Ns	Not mapped	25	Page 30	48, 49	Yes	Yes	Table 3-32
Stream 11	8	4.2	Perennial	Ashes Lake	No	29	Skamania County	F	F	100	Page 30	50, 51	Yes	Yes	Table 3-33
Stream 12	75	Not accessed	Intermittent	Rock Cove	No	29	City of Stevenson	Ns	Not mapped	50	Page 33	N/A	Yes	Yes	Table 3-34
Stream 13	400	1.9	Ephemeral	Columbia River	No	28	Skamania County	Ns	Not Mapped	25	Page 1 and Page 2	5	Yes	Yes	Table 3-35

[a] Averaged across multiple sample points within the survey area.

[b] Ephemeral streams are assumed to flow only in direct response to precipitation input. Intermittent streams are assumed to contain water only for part of the year, typically during late fall, winter and spring. Perennial streams have a permanent flow of water.

[c] Washington Department of Fish and Wildlife data was used to evaluated probable fish use (WDFW 2023a – WDFW 2023d).

OHWM = ordinary high-water mark; WRIA = Washington Water Resource Inventory Area; PJD = preliminary jurisdictional determination

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3.2.1 Columbia River

Table 3-22. Columbia River – Information Summary

Location of Stream Relative to Project:

The Columbia River occurs within the wetland survey area below Bonneville Lock and Dam within the Hamilton Island Recreation Area (Photo 1) and adjacent to a proposed HDD area near the City of Stevenson (Photo 68). The transmission cable will be installed using horizonal directional drilling (HDD) beneath the riverbed and shoreline areas where it will make landfall in Stevenson, Washington, and reenter the river at the U.S. Army Corps of Engineers (USACE) Hamilton Island Recreation Area.

Connectivity (where stream flows from/to):

The Columbia River is formed in the Rocky Mountains of British Columbia and flows northwest and then south into Washington, flowing southward until continuing west to form the border between Washington and Oregon and then discharging to the Pacific Ocean.

Riparian/Buffer Condition:

The 150-foot riparian corridor buffer along the right bank of the Columbia River, in the western section of the Project in the Hamilton Island Recreation area, is mainly comprised of upland native and invasive prairie vegetation and dispersed shrubs. Near the OHWM, the riparian area is comprised of narrow strips of black cottonwood and red alder, maintained grasses and impervious surface.

The 150-foot riparian corridor buffer along the right bank of the Columbia River in the eastern section of the Project is vegetated with black cottonwood, bigleaf maple, and Douglas fir, along with a shrubby understory of Himalayan blackberry and Oregon white oak. Upland grasses and weedy species are present in the herbaceous layer, but growth is limited due to underlying compacted gravel.

Additional Information:

The Columbia River is a shoreline of statewide significance (Type S water). Skamania County designates the Columbia River shoreline near Stevenson as a high intensity environment and as rural conservancy environment within the survey area near North Bonneville (Skamania County 2023b). Therefore, this portion of the Columbia River receives a 150-foot shoreline setback (buffer) for non-water dependent utility uses within the rural conservancy area and a 35-foor shoreline setback within the high intensity designated area near Stevenson, as regulated by the Skamania County Shoreline Master Program (Skamania County 2020). The Columbia River adjacent to the Project survey area contains many anadromous and resident fish species including fall chum, winter and summer steelhead, coho, pink salmon, spring, summer and fall Chinook, sockeye salmon, walleye, smallmouth and largemouth bass, white and green sturgeon, coastal cutthroat trout, dolly varden/bull trout, American shad, and mountain whitefish (WDFW Salmonscape). The Columbia River adjacent to the survey areas is designated critical habitat for bull trout, eulachon steelhead (Lower, Middle and Upper Columbia River, and Snake River Basin distinct population segments [DPS]), coho salmon (Lower Columbia River DPS),chum salmon (Columbia River evolutionarily significant unit [ESU]), sockeye salmon (Snake River), and Chinook salmon (Lower, Upper Columbia River and Snake River ESU) sockeye salmon (Snake River ESU) (NMFS 2023). The lower section of the Columbia River is also designated as Essential Fish Habitat to Chinook and coho salmon (NMFS 2023).

3.2.2 Stream 1

Table 3-23. Stream 1 – Information Summary

Location of Stream Relative to Project:

Stream 1 and its buffer are located within the survey area northwest of Ft. Cascades Drive (Photos 9 and 10).

Connectivity (where stream flows from/to):

Headwaters of Stream 1 are located in the hills to the west of the survey area. The channel originates in vegetated lands south of a gravel road, travels west and receives inputs from Ditch 4. The stream continues through Wetland 4 and northeast parallel to the north side of Ft. Cascades Drive, drains to a culvert and eventually discharges to a large wetland complex located east of Ft. Cascades Drive.

Riparian/Buffer Condition:

Within the buffer for Stream 1, lands adjacent are mainly devoid of trees and shrubs and are bisected by gravel and paved roads and hiking trails associated with the Hamilton Island Recreation Area. The riparian corridor to Stream 1 is mainly comprised of herbs and forbs with small patches of trees found in the roadside depressions associated with Wetland 4. Dominant understory species include Himalayan blackberry, rough bentgrass, cheatgrass (*Bromus tectorum*), chicory (*Cichorium intybus*), dandelion (common and cat ear [*Hypochaeris radicata*]), American vetch, dovesfoot geranium (*Geranium molle*) and to a lesser degree unidentified bluegrass species.

The overstory within Wetland 4 consists of black cottonwood and red alder as small trees and seedlings. Relatively small patches of reed canarygrass occur in the unforested areas within and just downstream of Wetland 4. Downstream of the wetland, signs of bed and bank are diffuse, the channel is wider and flow is slower relative to the stream characteristics upstream of Wetland 4.

Additional Information:

Stream 1 is an intermittent stream determined by signatures of bed and bank, and washed and sorted gravel/cobbles. Topography at the upper portion of the stream is roughly 5 to 10 percent slope downgradient to the east and northeast. Adjacent to Ft. Cascades Road, the streambed is roughly 1 to 3 percent slope. The stream splits into multiple channels prior to entering Wetland 4. Through Wetland 4, topography is generally flat and stream flow pools and discharges very slowly to the northeast and appears stagnant in some areas. Stream 1 is the dominant source of hydrology for Wetland 4. This stream is not mapped in the NWI or NHD. No macroinvertebrates were observed at the time of the survey, and no occurrences of fish are documented in Stream 1 at the time of the survey. However, Stream 1 is considered fish bearing (Type F) due to its intermittent flow and proximity and potential connectivity to fish bearing streams down gradient.

3.2.3 Stream 2

Table 3-24. Stream 2 – Information Summary

Location of Stream Relative to Project:

Stream 2 and its buffer are located north of SR 14 and flows from northwest to southeast before entering Ditch 6 (Photo 21).

Connectivity (where stream flows from/to):

Stream 2 originates from an unnamed pond located roughly 1,000 feet northwest of the survey area. The stream flows from the pond down a steep gradient and into a roadside ditch parallel to SR 14 for approximately 80 feet before draining to a culvert beneath the highway that discharges to the Columbia River.

Riparian/Buffer Condition:

The riparian corridor within the buffer of Stream 2 consists primarily of common native forest species. The overstory is dense and largely comprised of bigleaf maple interspersed with a few red alder and Douglas fir. The shrubby understory includes osoberry (*Oemleria ceraiformis*), snowberry (*Symphoricarpos albus*), trailing blackberry (*Rubus ursinus*) and Himalayan blackberry. Herbaceous species such as field horsetail and unidentified grasses occur sparsely within the buffer.

Additional Information:

Stream 2 is an intermittent stream determined by signatures of bed and bank, and washed and sorted gravel and rocks. Within the survey area, the streambed has a slope of 3 to 5 percent to the northeast. The NWI maps this stream as a R4SBC water. Both the NWI and NHD map this stream as an intermittent water. No macroinvertebrates were observed at the time of the survey. Because the upstream and downstream waters are Type F/S waters, the bankfull width is greater than 2 feet, and the streambed gradient is less than 16 percent, the stream is assumed to be fish bearing (Type F). No occurrences of fish were observed during the survey nor are documented in Stream 2 by WDFW.

3.2.4 Stream 3

Table 3-25. Stream 3 – Information Summary

Location of Stream Relative to Project:

Stream 3 and buffer are located within the survey area north of SR 14 (Photo 22).

Connectivity (where stream flows from/to):

Stream 3 originates from an unnamed pond approximately 600 feet to the northwest of the survey area and flows from northwest to southeast. The steam follows a steep gradient down to the highway where local topography becomes relatively flatter (Photo 23a). Stream 3 joins with Stream 2 and Ditch 6 and drain collectively to a culvert beneath the highway that discharges to the Columbia River.

Riparian/Buffer Condition:

Most of the riparian corridor within the 25-foot buffer of Stream 3 has been highly modified by recent human disturbance. Review of current and historic aerials indicate this area was cleared of vegetation and graded 8 to 10 months prior to the survey and is likely related to a utility project. During the survey, biologists noted a large amount of fill material (as deep as 4 feet) had been placed in the area. Herbaceous vegetation appeared to be first succession and just beginning to reestablish.

Most of the western portion of the buffer occurs within Wetland 9 and vegetation is mainly comprised of reed canarygrass with some field horsetail, broadleaf cattail and Himalayan blackberry. Overstory species observed outside the disturbed area include red osier dogwood, red alder, and Oregon ash with some bigleaf maple.

The eastern portion of the buffer occurs in an upland area and within the survey area most occurs in the recently disturbed section. Very little vegetation was present within the disturbance and consisted of dispersed occurrences of American vetch, Canada thistle, and unidentified blue grasses specie(s). Dominant vegetation in this portion of the undisturbed portion of the buffer includes Douglas fir, bigleaf maple and western hemlock, osoberry and Himalayan blackberry.

Additional Information:

Stream 3 is an intermittent stream determined by signatures of bed and bank, and washed and sorted gravel and small rocks. Within the survey area, the streambed has a slope of roughly 3 to 5 percent to the southeast. The NWI maps this stream as a R4SBC water. Both the NWI and NHD map this stream as an intermittent water. No macroinvertebrates were observed at the time of the survey. Because the upstream and downstream waters are Type F/S waters, stream bankfull width is greater than 2 feet and the streambed gradient is less than 16 percent, the stream is assumed to be fish bearing (Type F). No occurrences of fish were observed during the survey nor are documented in Stream 3 by WDFW.

3.2.5 Stream 4

Table 3-26. Stream 4 – Information Summary

Location of Stream Relative to Project:
Stream 4 and its buffer are located within the survey area along Ash Lake Road (Photo 31a).

Connectivity (where stream flows from/to):
Stream 4 flows from south to north through the survey area via a culvert beneath Ash Lake Road. The stream receives flow from a small unnamed lake and from the north side of Ash Lake Road discharges to a series of ponds and eventually to Ashes Lake.

Riparian/Buffer Condition:
The riparian corridor within the buffer of Stream 4 consists primarily of common native forest species. The overstory is dense and largely comprised of bigleaf maple and Douglas fir with few occurrences of red alder and western hemlock. The shrubby understory includes vine maple, osoberry, snowberry, sword fern (*Polystichum munitum*), and Oregon grape (*Mahonia aquifolium*).

Additional Information:
Stream 4 is an intermittent stream determined by signatures of bed and bank, and washed and sorted gravel and rocks. Within the survey area, the streambed has a slope of roughly 10 to 15 percent to the north. The NWI maps this stream as a R4SBC water. Both the NWI and NHD map this stream as an intermittent water. No macroinvertebrates were observed at the time of the survey. Because the upstream and downstream lakes are Type F waters, the stream is assumed to be fish bearing despite the culvert discharge point being perched on 50 percent slopes south of Ash Lake Road (Photo 31b). No occurrences of fish were observed during the survey nor are documented in Stream 4 by WDFW.

3.2.6 Stream 5

Table 3-27. Stream 5 – Information Summary

Location of Stream Relative to Project:

Stream 5 is a perennial, unnamed stream located within the survey area along Ash Lake Road, along with a portion of its buffer (Photo 32).

Connectivity (where stream flows from/to):

Stream 5 flows from west to east through the survey area west of Ash Lake Road. The stream travels below the Project area via a culvert. The stream receives flow from Squaw and Blue lakes and discharges directly to Ashes Lake.

Riparian/Buffer Condition:

The riparian corridor within the buffer of Stream 5 is a largely undisturbed narrow valley and consists of common native forest species and invasives (Photo 33). The overstory both upstream and downstream of the Project area is relatively dense, with very few mature trees and dominated by bigleaf maple, Douglas fir, and red alder. Topography along the streambed ranges from approximately 5 to 15 percent slope, downgradient to the east. Slopes adjacent to the streambed range from 25 to 50 percent. Upstream of the culvert, a dry side channel to the south of Stream 8 was noted. Minimal to no vegetation occurs within the active OHWM of the stream.

Upstream of Ash Lake Road, understory shrubs are mainly vine maple and thick patches of Himalayan blackberry. Downstream of the road shrubs in the riparian buffer are almost exclusively Himalayan blackberry and an unidentified grape species (possibly riverbank grape, *Vitis riparia*) with some snowberry, and vine maple in upland areas (Photo 33).

The herbaceous layer within the buffer upstream of Ash Lake Road and immediately adjacent to the Stream 8 is sparsely populated with water parsley, stinging nettle (*Urtica dioica*), arctic butterbur (*Petasites frigidus*), fragrant fringecup (*Tellima grandiflora*), and lady fern (*Athyrium filix-femina*). The upland buffer has dispersed occurrences of sword fern and Oregon grape but is mainly Himalayan blackberry cover. The herbaceous layer downstream of the culvert is very narrow along the stream bank and consists of arctic butterbur with some stinging nettle and lady fern.

Additional Information:

Stream 5 is a perennial stream determined by strong signatures of bed and bank, washed and sorted gravel and embedded rocks in the streambed. At least three different species of macroinvertebrates were observed at the time of the survey. The NWI maps Stream 5 as a R5UBH perennial water and PFO1A wetland. Washington Department of Fish and Wildlife (WDFW) databases indicate the presumed presence of winter steelhead (*Oncorhynchus mykiss*) and modeled presence of coho salmon (*Oncorhynchus kisutch*). The National Oceanic and Atmospheric Administration (NOAA) map this stream as critical habitat for the Lower Columbia River Distinct Population Segment (DPS) for steelhead. Stream 5 is a Type F water.

3.2.7 Stream 6

Table 3-28. Stream 6 – Information Summary

Location of Stream Relative to Project:

Stream 6 is an ephemeral, unnamed stream located within the survey area along Ash Lake Road, along with its buffer.

Connectivity (where stream flows from/to):

Stream 6 flows from north to south through the survey area and primarily receives flow during high rainfall periods by precipitation runoff from hills upslope. The stream travels beneath the Project area via a culvert and discharges down a steep grade to Ash Lake (Photo 39).

Riparian/Buffer Condition:

The riparian corridor within the buffer of Stream 6 located within the Project survey area is primarily comprised of reed canarygrass and Himalayan blackberry. The shrub layer is dominated by vine maple, osoberry, snowberry, and red elderberry (*Sambucus racemosa*). The overstory both upstream and downstream of the Project area is dominated by bigleaf maple and Douglas fir, with very few mature trees. Topography along the streambed ranges from approximately 1 to 3 percent slope, downgradient to the south. Slopes adjacent to the streambed range from 5 to 15 percent.

Additional Information:

Discharge from Stream 6 is partially impounded by a culvert overgrown with reed canarygrass (Photo 38). Faint signatures of bed and bank were observed at the time of the field survey albeit overgrowth with reed canarygrass and submerged beneath overbank flow the partially blocked, slow draining culvert. A wetland (Wetland 19) was delineated in a depressional area adjacent to the west of the stream. This stream is not mapped in the NWI. No occurrences of fish were observed during the survey nor are documented in Stream 6 by WDFW Because the slope between Ash Lake Road and Ashes Lake is greater than 16 percent and no mapped or observed waters are present upslope of the survey area, Steam 6 is assumed to be Type Ns water.

3.2.8 Stream 7

Table 3-29. Stream 7 – Information Summary

Location of Stream Relative to Project:

Stream 7 is an intermittent, unnamed stream located within the survey area along Ash Lake Road, along with its buffer.

Connectivity (where stream flows from/to):

Stream 7 flows from north to south through the survey area and primarily receives flow from ponds and wetland located upstream as well as high ground water table. Hydrology discharges to a culvert beneath the Project area to Ashes Lake (Photo 41).

Riparian/Buffer Condition:

The riparian corridor within the buffer of Stream 6 located within the Project survey area is primarily comprised of intact forest comprised of native species. The herbaceous layer within the riparian buffer included both wetland and upland species such as jewelweed, field horsetail, herb Robert (*Geranium robertianum*), tall ryegrass, and sword fern. The shrub layer is dominated by vine maple and the overstory both upstream and downstream of the Project area is dominated by bigleaf maple and Douglas fir, with dispersed occurrences of grand fir (*Abies grandis*) and red alder. No mature trees were observed within the riparian buffer. Topography along the streambed ranges from approximately 3 to 25 percent slope, downgradient to the south. Slopes adjacent to the streambed range from 5 to 25 percent. The OHWM downstream of the culvert is much wider than the OHWM that occurs upstream of the culvert and within the Project survey area. This may be attributed to culvert influences.

Additional Information:

Stream 7 flows through and hydrology is contributed to Wetland 11, which occurs along the right and left banks of the stream for a short distance prior to the stream discharging to a culvert beneath Ash Lake Road. The stream was determined to be intermittent based on strong signatures of bed and banks, and sorting of gravels and rock. No macroinvertebrates were observed at the time of the survey. This stream is mapped in the NHD as an intermittent stream. This stream is not mapped in the NWI and has no documented fish presence by WDFW. However, Stream 7 is assumed to be fish bearing due to the presence of Type F waters both upstream and downstream. No occurrences of macroinvertebrates or evidence of fish presence were documented in Stream 7 during the survey.

3.2.9 Stream 8

Table 3-30. Stream 8 – Information Summary

Location of Stream Relative to Project:

Stream 8 is a high energy perennial, unnamed stream that crosses beneath Ash Lake Road (Photo 44). A small portion of the stream and buffer occur in the survey area north of the road.

Connectivity (where stream flows from/to):

Stream 8 originates from upstream lakes and wetlands including Bowles Lake. The stream flows from northwest to southeast, under Ash Lake Road via a culvert and discharges down a moderately steep gradient to Ashes Lake.

Riparian/Buffer Condition:

The riparian corridor within the buffer of Stream 8 is a largely undisturbed narrow valley and consists of common native forest species and invasives. The overstory within the buffer is dense, with very few mature trees and dominated by bigleaf maple, Douglas fir, and red alder with a few occurrences of black cottonwood. Topography along the streambed ranges from approximately 5 to 15 percent slope, downgradient to the southeast. Slopes adjacent to the streambed range from 10 to 40 percent. Minimal to no vegetation occurs within the active OHWM of the stream. Upstream of Ash Lake Road, understory shrubs are dominated by dense communities of Himalayan blackberry with some vine maple, osoberry, and snowberry.

The herbaceous layer within the riparian buffer is highly restricted by Himalayan blackberry growth and confined to dispersed occurrences at the edge of the stream. Herbaceous species observed at the time of the survey include field horsetail, climbing nightshade (*Solanum dulcamara*), deer fern (*Blechnum spicant*), and unidentified grasses.

There are no wetlands associated with this stream likely due to high energy streamflow and steep gradient along the banks.

Additional Information:

Stream 8 is a perennial stream determined by strong signatures of bed and bank, washed and sorted sands, gravel, cobbles and embedded rocks within the streambed (Photo 45). No macroinvertebrates were observed at the time of the survey. WDFW databases indicate modeled presence of coho salmon (*Oncorhynchus kisutch*). The NWI maps the stream as a R4SBC intermittent water. The NHD also maps this stream as intermittent. Stream 8 is a Type F stream.

3.2.10 Stream 9

Table 3-31. Stream 9 – Information Summary

Location of Stream Relative to Project:

Stream 9 is a low energy, intermittent stream located within the survey area along Ash Lake Road, along with its buffer.

Connectivity (where stream flows from/to):

Stream 9 flows from northwest to southeast through the survey area and primarily receives flow from precipitation runoff from hills located upstream as well as high ground water table. Hydrology discharges to a culvert beneath the road and then to Ashes Lake.

Riparian/Buffer Condition:

The riparian corridor within the buffer of Stream 9 located within the Project survey area is comprised mainly of native forest with a dense understory (Photo 47). The herbaceous layer within the riparian buffer includes both wetland and upland species such as fragrant fringecup, lady fern, climbing nightshade, deer fern, and sword fern. The shrub layer is dominated by vine maple with some Himalayan blackberry and the overstory is dominated by bigleaf maple and Douglas fir, with dispersed occurrences of Oregon ash and red alder. Topography along the streambed is approximately 2 to 3 percent slope, downgradient to the south. Slopes adjacent to the streambed range from 5 to 20 percent. The OHWM at culvert is much wider than the OHWM that occurs upstream of the culvert, likely attributed to influences of an undersized culvert.

Additional Information:

The stream was determined to be intermittent based on strong signatures of bed and banks, and sorting of gravels and rock. No macroinvertebrates were observed at the time of the survey. This stream is mapped in the NHD as an intermittent stream. This stream is not mapped in the NWI. The stream discharges to a culvert beneath Ash Lake Road roughly 10 feet below road grade and the discharge point on the south side of the road is roughly 60 feet below road grade and greater than 16 percent slope; therefore, Stream 9 is a Type Ns stream. No occurrences of fish were observed during the survey nor are documented in Stream 9 by WDFW.

3.2.11 Stream 10

Table 3-32. Stream 10 – Information Summary

Location of Stream Relative to Project:

Stream 10 is an intermittent stream located, along with the riparian buffer, within the survey area along Ash Lake Road.

Connectivity (where stream flows from/to):

Stream 10 flows from southwest to northeast through the survey area and primarily receives flow from precipitation runoff from hills located upstream as well as high ground water table. A wetland (Wetland 13) has formed on the right and left banks of the stream and within a roadside ditch immediately adjacent to Ash Lake Road. Hydrology from the stream and wetland discharges to a wetland located to the west and north of Mallicott Road and is assumed to discharge to Ashes Lake.

Riparian/Buffer Condition:

The riparian corridor within the buffer of Stream 10 located within the Project survey area is primarily comprised of native forest with a dense understory (Photo 49). The herbaceous layer within the riparian buffer was dominated with grasses, including reed canarygrass, annual bluegrass and orchard grass. The shrub layer is dominated by English hawthorn (*Crataegus laevigata*), vine maple with some Himalayan blackberry. The overstory is dominated by bigleaf maple and Douglas fir, with dispersed occurrences of Oregon ash, red alder and tree of heaven (*Ailanthus altissima*). Topography along the streambed north of Ash Lake Road is approximately 2 to 3 percent slope, downgradient to the southeast. The streambed parallel to the road ranges in gradient roughly 3 to 8 percent downgradient to the northeast. Slopes adjacent to the streambed range from 5 to 10 percent.

Additional Information:

The stream was determined to be intermittent based on strong signatures of bed and banks, sorting of gravels and rock, and minor occurrences of vegetation growing within the OHWM. No macroinvertebrates were observed at the time of the survey. This stream is not mapped in the NWI or NHD. The stream is less than 2 feet wide with no surface water connection to fish bearing waters; therefore, Stream 10 is a Type Ns stream. No occurrences of fish were observed during the survey nor are documented in the stream by WDFW.

3.2.12 Stream 11

Table 3-33. Stream 11 – Information Summary

Location of Stream Relative to Project:

Stream 11 is a perennial, unnamed stream that crosses beneath Ash Lake Road (additional photos included in summary tables and photo log for Wetland 14 and Wetland 15). The riparian buffer also occurs in the survey area.

Connectivity (where stream flows from/to):

Stream 11 originates from upstream wetlands and waters including Sardine Lake. The stream flows through the survey area primarily via a culvert beneath Ash Lake Road. Outside the survey area the stream occurs as surface water that drains Wetland 14 and Wetland 15 to Ashes Lake.

Riparian/Buffer Condition:

The riparian corridor within the buffer of Stream 11 is a mainly herbaceous vegetation dominated by reed canarygrass and broadleaf cattail. The northern boundary of the riparian buffer is comprised of trees and shrubs including red alder, big leaf maple, Oregon ash, and vine maple. The southern portion of the buffer is comprised of steeply graded road fill. Topography along the streambed ranges from approximately 1 to 3 percent slope, downgradient to the southwest. Slopes adjacent to the streambed range from 5 to 50 percent grade. Minimal to no vegetation occurs within the active OHWM of the stream.

Additional Information:

The stream was determined to be perennial based on strong signatures of bed and banks, sorting of gravels and rock, and minor occurrences of vegetation growing within the OHWM. No macroinvertebrates were observed at the time of the survey. This stream is not mapped in the NWI or NHD. Due to the width and relatively low gradient of the observed stream bed, Stream 11 is considered a Type F stream and is mapped as such by WDNR. No occurrences of fish were observed during the survey nor are documented in the stream by WDFW.

3.2.13 Stream 12

Table 3-34. Stream 12 – Information Summary

Location of Stream Relative to Project:

Stream 12 is an intermittent, unmapped stream that crosses beneath Ash Lake Road (additional photos included in summary table and photo log for Wetland 17). The riparian buffer also occurs in the survey area.

Connectivity (where stream flows from/to):

Stream 12 originates from upslope wetlands. The stream flows through the survey area primarily via a culvert beneath an unused driveway adjacent to SR 14. Outside the survey area the stream occurs as surface water that drains Wetland 17 to Rock Cove.

Riparian/Buffer Condition:

The riparian corridor within the buffer of Stream 12 is a mainly shrubby vegetation dominated by dense Himalayan blackberry and bigleaf maple shrubs. Topography along the streambed ranges from approximately 5 to 8 percent slope, downgradient to the northeast. Slopes adjacent to the streambed range from 5 to 50 percent grade due to stream downcutting.

Additional Information:

Visibility to the streambed was limited due to dense vegetation. The stream was determined to be intermittent based on strong signatures of bed and banks and little to no occurrences of vegetation growing within the OHWM. No macroinvertebrates were surveyed. This stream is not mapped in the NWI or NHD. Because of the steep culverted gradient at the discharge point of Stream 12 to Rock Cove, the stream is considered a Type Ns stream. No occurrences of fish were observed during the survey nor are documented in the stream by WDFW.

3.2.14 Stream 13

Table 3-35. Stream 13 – Information Summary

Location of Stream Relative to Project:

Stream 13 is an ephemeral, unmapped stream that flows along the north side of Fort Cascade Drive, and then discharges to the Columbia River via culvert. The riparian buffer also occurs in the survey area.

Connectivity (where stream flows from/to):

Stream 13 originates from the southern boundary of Wetland 1 and contributes hydrology to Wetland 2 (Photo 5). The stream likely only receives flow when high precipitation inputs exceed the storage capacity of Wetland 2 and surrounding lands. Other hydrology inputs include runoff from lands upslope and the adjacent road.

Riparian/Buffer Condition:

The riparian buffer of Stream 13 is a mainly herbaceous vegetation comprised of Poa species, rough bentgrass, and chicory. Dense Himalayan blackberry and black cottonwood line the north side near the outlet of Wetland 1 and input of Wetland 2. Topography along the streambed is relatively flat as it moves laterally along a toe slope. Slopes adjacent to the streambed range from 2 to 15 percent grade.

Additional Information:

The stream was determined to be ephemeral based on faint signatures of bed and banks and the presence of vegetation growing within the ordinary OHWM. This stream is not mapped in the NWI or NHD. No occurrences of macroinvertebrates were documented in Stream 13. No occurrences of fish were observed during the survey nor are documented in the stream by WDFW. Stream 13 was determined to be a Type Ns stream.

3.3 Lakes, Drainages and Other Surveyed Areas

Eight ditches and five deepwater habitats were observed in the survey area. Detailed summaries, preliminary jurisdictional determinations and applicable buffers are presented in Table 3-36.

All ditches occurred parallel to roadway and were likely created during road construction for drainage and in some areas, vegetation appeared to be maintained. Most ditches were determined to be ephemeral based on the lack of or weakly defined bed and bank and thick vegetation growth. No ditches were mapped in the NWI or NHD and no agency databases documented fish use. Additionally, none of these drainages are mapped waterways, and there is no identified fish use. All ditches had a surface water connection to waters of the U.S or Washington State.

Deepwater habitats include Ice House Lake 1, Ice House Lake 2, Wecoma Lake, Ashes Lake and Rock Cove. All deepwater habitat drain to or have a direct surface water connection with the Columbia River. The Columbia River including Ashes Lake and Rock Cove are designated shorelines of Washington State.

A total of seven verification plots were evaluated within the survey area and are shown on maps in Appendix E. Wetland determination data forms for these plots are located in Appendix B (VP-1 through VP-7) and photos are included with Appendix D (Photos 6, 8, 14, 20, 43, 64, and 65).

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Table 3-36. Summary of Other Waters and Drainages in the Survey Area

Waterbody	Flow Regime[a]	Tributary to	Local Jurisdiction	Approx. Length in Survey Area (feet)	OHWM Width (feet)[b]	Water Type	Buffer	Figure 4 Reference	Photo Points	USACE PJD	Ecology PJD	Description
Ditch 1	Ephemeral	Columbia River	Skamania County	132	1.3	Ns	N/A	Page 2	6	No	No	Ditch 1 is a roadside ditch that originates along the north side of Ft. Cascades Drive, flows west and discharges to the Columbia River via a culvert (Photo 6). Flow is ephemeral and hydrology inputs are received from lands upslope to the north and roadway runoff during heavy or prolonged rain events. The ditch is vegetated mainly with grasses and upland weedy species with faint signatures of bed and bank. A verification plot (Plot VP-1, Appendix B) was evaluated and land adjacent were determined to be upland. The same vegetative communities were observed on the majority lands adjacent to the roadside ditches along Ft. Cascades Drive. This ditch does not provide fish habitat.
Ditch 2	Ephemeral	Columbia River	Skamania County	735	2.0	Ns	N/A	Page 3	7	No	No	This ditch is similar in description as Ditch 1; no verification plot was taken at Ditch 2 (Photo 7). A This ditch does not provide fish habitat.
Ditch 3	Ephemeral	Stream 1 to large wetland complex	Skamania County	499	2.0	Ns	N/A	Page 3 and Page 4	8	No	No	Ditch 3 is an ephemeral roadside ditch that occurs north of Ft. Cascades Drive (Photo 8), flows northeast and discharges to Stream 1 and then to a mapped NWI wetland complex located east of the road. Hydrology can be attributed to precipitation runoff from upslope hills and roadway runoff. The ditch was vegetated with grasses and weedy species and had faint bed and bank signatures. A verification plot (Plot VP-2, Appendix B) determined that lands adjacent to the ditch to be upland. This ditch does not provide fish habitat.
Ditch 4	Ephemeral	Upland	City of North Bonneville	733	1.5	N/A	N/A	Page 7	15	No	No	Ditch 4 is roadside ditch along Ft. Cascades Drive to the north (Photo 15). This vegetated ephemeral ditch has intermittent signature of bed and bank and infiltrates on site. Hydrology is attributed to precipitation runoff from upslope hills and roadway runoff. Vegetation is mainly comprised of grasses, mosses and upland weedy species. This ditch does not provide fish habitat.
Ditch 5	Intermittent	Columbia River	Skamania County	1233	3.5	Ns	N/A	Page 20	23	No	No	Ditch 5 is roadside ditch along the north side of SR 14. This intermittent ditch has signature of bed and bank and is sparsely vegetated with common upland weedy species for the majority. Within the survey area near Wetland 9, the ditch has been recently altered by restoration-related disturbance (Photo 23b). Historic images show reed canarygrass and broadleaf cattail growing along the north edge of the ditch and within Wetland 9 but was mostly unvegetated at the time of the survey. Hydrology is attributed to precipitation runoff from upslope hills, surface runoff from SR 14, and at the lowest reach, discharge from Stream 2, Stream 3 and Wetland 9. Ditch 5 drains via a culvert beneath SR 14 to the Columbia River. This ditch does not provide fish habitat.

Waterbody	Flow Regime[a]	Tributary to	Local Jurisdiction	Approx. Length in Survey Area (feet)	OHWM Width (feet)[b]	Water Type	Buffer	Figure 4 Reference	Photo Points	USACE PJD	Ecology PJD	Description
Ice House Lake 1	Permanently Flooded	Columbia River	Skamania County	0	N/A	F	100	Page 22	26, 27	Yes	Yes	Ice House Lake 1 is a 1.6-acre deepwater habitat mapped in the NWI as palustrine unconsolidated bottom with a permanently flooded water regime (Photo 26). The OHWM of the lake occurs outside the survey area. The lake is impounded along with eastern boundary by the roadbed of SR 14. Ice House Lake 1 receives hydrology primary from Rand Lake located upslope and to the west as well as precipitation runoff from adjacent hills. The lake discharges to the Columbia River via a culvert located beneath SR 14 (Photo 27). Fringe wetlands likely occur at the west end of the lake roughly 600 feet from the survey area. According to WDFW, the lake is stocked with rainbow and cutthroat trout. Bluegill and largemouth bass are also present. Pacific clubtail, a priority fish species, occurs in the lake.
Ice House Lake 2	Permanently Flooded	Columbia River	Skamania County	0.10 acres	N/A	F	100	Page 23 and Page 24	28, 29	Yes	Yes	Ice House Lake 2 is a roughly 2.0-acre deepwater habitat mapped in the NWI as palustrine unconsolidated bottom that is permanently flooded (Photo 28). The lake is impounded on the east end by Ash Lake Road. The lake receives hydrology primarily from upstream lakes including Wishram Lake. Ice House Lake 2 drains to two culverts beneath Ash Lake Road and on to the Columbia River (Photo 29).
Wecoma Lake	Permanently Flooded	Columbia River	Skamania County	0	N/A	F	100	Page 24 and Page 25	30	Yes	Yes	Wecoma Lake is roughly 8.0-acre deepwater habitat mapped in the NWI as palustrine unconsolidated bottom that is permanently flooded (Photo30). Wecoma Lake drains via a culvert beneath Ash Lake Road to Little Deep Lake and eventually the Columbia River.
Ditch 6	Ephemeral	Ashes Lake	Skamania County	87	1.0	Ns	N/A	Page 28	45	No	No	Ditch 6 is an ephemeral roadside ditch that occurs north of Ash Lake Road (Photo 42). Faint signatures of bed and bank and intermittent pools of standing water were observed along the length of the ditch. The ditch receives hydrology from hills upslope and roadway runoff. The ditch flows northeast to southwest and discharges via a culvert to Ashes Lake. The ditch is vegetated with upland grasses and weedy species. This ditch does not provide fish habitat.
Ashes Lake	Permanently Flooded	Columbia River	Skamania County	0	N/A	S	150	Page 26 - Page 30	N/A	Yes	Yes	Ashes Lake is approximately 60 acres in size, and is located downslope and to the south of Ashes Lake Road. The Ashes Lake buffer extends to the south side of Ashes Lake Road. Ashes Lake is buffered by a forested overstory of mature coniferous and deciduous tress, which provide almost 100 percent canopy cover throughout to the north, west and south. The overstory is comprised of primarily Douglas fir, with bigleaf maple and red alder also present. The understory is dominated by vine maple, sword fern, and Himalayan blackberry. Topography includes very steep slopes, and high energy drainages. Highway 14 is located to the east, where a large culvert provides connectivity to the Columbia River.

Waterbody	Flow Regime[a]	Tributary to	Local Jurisdiction	Approx. Length in Survey Area (feet)	OHWM Width (feet)[b]	Water Type	Buffer	Figure 4 Reference	Photo Points	USACE PJD	Ecology PJD	Description
Ditch 7	Ephemeral	Upland	Skamania County	192	<1.0	Ns	N/A	Page 31	55, 56	No	No	Ditch 7 is an ephemeral roadside ditch that occurs within the Project survey area north of SR 14 (Photo 52). Faint signatures of bed and bank, drainage patterns and movement of debris were observed along the length of the ditch (Photo 53). The ditch likely receives hydrology from Wetland 16 during periods of high rain fall. Inputs may also be attributed to precipitation runoff from hills to the north and the adjacent roadway. The ditch flows northeast to southwest and discharges to an upland area. The ditch is vegetated with upland grasses and weedy species. This ditch does not provide fish habitat.
Rock Cove	Permanently Flooded	Columbia River	Skamania County/ City of Stevenson	0	N/A	S	150	Page 33	63	Yes	Yes	Rock Cove is approximately 70 acres in size, and is located the north of Highway 14. The Rock Cove buffer extends Highway 14 to the south, and towards the Columbia Gorge Museum to the west. The vegetated buffer of Rock Cover is located on steep slopes, and is comprise of a Himalayan blackberry understory, and bigleaf maple and red alder overstory. Douglas fir are present in lower quantities near to top of slope. Mowed grasses, landscape species and impervious soils are also present within the Rock Cove buffer.

[a] Ephemeral ditches are assumed to flow only in direct response to precipitation input. Intermittent ditches are assumed to contain water only for part of the year, typically during winter and spring.

[b] Averaged across several measurements within the survey area.

OHWM = ordinary high-water mark; PJD = preliminary jurisdictional determination; N/A = not applicable

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Appendix A. Standard Wetland Delineation Methods

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Wetland Delineation Methodology

HDR biologists delineated wetlands within the survey area using the three-parameter approach described in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region* (Environmental Laboratory 2010). Sample plot locations were selected based on available resource maps, aerial imagery taken during the early growing season and on-site assessment of the survey area including identification of dominant plant species, soil probes, surface hydrology and topography. Formal paired sample plots were established to document wetland and upland conditions at delineated wetland boundaries. Additional verification plots (Table 3-36) were collected to verify conditions in suspect areas within the survey boundary. Data for each sample plot investigation were recorded on the USACE Wetland Determination Data Forms for the Western Mountains, Valleys, and Coast Region (USACE 2010) included in Appendix B. Sample plot and wetland boundary locations were recorded with survey-grade GPS units capable of sub-meter accuracy (Trimble 7X GPS unit and an Arrow GNSS receiver), surveyed by qualified delineator and mapped on Figure 4 (Appendix E).

Wetland habitats in the survey area were classified according to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and the Hydrogeomorphic (HGM) Classification for Wetlands (Brinson et al. 1993).

Methods used in the field that deviated from this approach are outlined in Section 2.4.1 of the report.

Vegetation

Sample plots varied in shape depending on site topography and the positioning of the wetland on the landscape. For example, on steep-sided survey areas such as a roadway cut slope, a plot may be a strip of land; within a floodplain, a plot would be a standard 30-foot circle.

Dominant vegetation at each sample plot was identified and were evaluated against the USACE National Wetland Plant List for the Western Mountains, Valleys and Coast Region to determine identified species' wetland indicator status (USACE 2023). Biologists applied the 50/20 rule to determine which species were dominant at a sample plot. Under this guidance, absolute cover estimates were determined for each species rooted within the sample plot for each vegetative strata found at the sample plot (tree, sapling/shrub, herb, and woody vine).

Hydrophytic vegetation is defined as vegetation adapted to wetland conditions. To meet the hydrophytic vegetation criterion, more than 50 percent of the dominant plants in each stratum must have a wetland indicator status of Facultative, Facultative Wetland, or Obligate. All wetland plant indicator categories are defined in Table A-1.

Plants that were unable to be identified to species level were recorded on wetland determination date form with the FAC indicator. Scientific and common plant names follow currently accepted nomenclature. Most names are consistent with *Flora of the Pacific Northwest 2nd Edition* (Hitchcock and Cronquist 2018) and the PLANTS Database (USDA NRCS 2023).

Table A-1. Definitions of Wetland Plant Indicator Categories used to Determine the Presence of Hydrophytic Vegetation

Wetland Indicator Category	Symbol	Definition
Obligate Wetland Plants	OBL	Plants that almost always occur in wetlands.
Facultative Wetland Plants	FACW	Usually occur in wetlands, but may occur in non-wetlands.
Facultative Plants	FAC	Occur in wetlands and non-wetlands.
Facultative Upland Plants	FACU	Usually occur in non-wetlands, but may occur in wetlands.
Upland Plants	UPL	Almost never occur in wetlands.

Source: USACE 2023

Soils

Soils at each sample plot were typically inspected to a depth of 18 to 24 inches to determine the presence or absence of hydric soil indicators based on the Natural Resource Conservation Service (NRCS) Field Indicators of Hydric Soils (USDA NRCS 2018) Soil samples were moistened when necessary to aid in the determination of soil matrix and redoximorphic features (if present) hue, value, and chroma (Munsell Color Services 2009). Soil texture was evaluated using field methods described by the USACE and NRCS.

Hydrology

HDR biologists examined the area within and adjacent to sample plots for evidence of hydrology. Wetland hydrology criteria were considered to be satisfied if it appeared that the soil was seasonally inundated or saturated to the surface for a consecutive number of days greater than or equal to 12.5 percent of the growing season.

Wetland hydrology indicators are divided into two categories – primary and secondary indicators (Environmental Laboratory 2010). Primary indicators of hydrology included surface inundation, high water table, and saturated soils, among others. In the absence of a primary indicator, observation of two or more secondary indicators was required to conclude that wetland hydrology was present. Secondary indicators of hydrology included dry-season water table, geomorphic, and FAC-neutral test, among others.

Normal Circumstances

Normal circumstances are defined in the Wetland Delineation Manual as “the soil and hydrologic conditions that are normally present, without regard to whether the vegetation has been removed”. In instances where normal circumstances did not exist due to human activity, alternative methods are explained in Section 2.4.1 and noted on wetland determination data forms.

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Appendix B. Wetland Determination Data Forms

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/6/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W1-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 1

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area. No soils or subsurface hydrology were evaluated; hydric soils are assumed based on strong hydrophytic vegetation and clear evidence of wetland hydrology. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. Wetland located at the toe of slope in a narrow depressional area. Hummocks are present throughout the wetland.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Populus balsamifera	10	Yes	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Populus balsamifera	5	Yes	FAC
2. Rubus armeniacus	2	Yes	FAC
3.			
4.			
5.			
	7	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Juncus effusus	78	Yes	FACW
2. Phalaris arundinacea	15	No	FACW
3. Juncus dudleyi	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	98	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 2

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		x1=	
FACW species	93	x2=	186
FAC species	22	x3=	66
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	115 (A)		252 (B)

Prevalence Index = B/A= 2.19

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Hummocks present with narrow channels of bare ground. Sample plot meets dominance test for hydrophytic vegetation.

SOIL

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

[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 MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Soils were not excavated in this area. Hydric soils assumed based on observations of hydrophytic vegetation, wetland hydrology, geomorphic position and recent aerial images.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 1.00

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

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes X No** ___

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" area. Wetland plot meets primary wetland indicators for surface water (A1), and secondary indicators for geomorphic position (D2) and FAC-neutral test (D5).

Additional Reference Data: Photos

Photo Name: Photo_231106132700

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/6/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W1-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 0

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area; no soils or subsurface hydrology were evaluated. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. Upland data plot is located approximately 5 feet southwest of wetland plot. Plot meets the dominance test for hydrophytic vegetation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)			
1. Alnus rubra	10	Yes	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Poa spp.	40	Yes	FAC
2. Cichorium intybus	35	Yes	FACU
3. Plantago lanceolata	10	No	FACU
4. Vicia americana	5	No	FAC
5. Senecio jacobaea	5	No	FACU
6. Dactylis glomerata	3	No	FACU
7.			
8.			
9.			
10.			
11.			
	98	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 2

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x1=	____
FACW species	____	x2=	0
FAC species	65	x3=	195
FACU species	53	x4=	212
UPL species	____	x5=	0
Column Totals:	118 (A)		407 (B)

Prevalence Index = B/A= 3.45

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Although the sample plot meets the dominance test for hydrophytic vegetation. Wetland boundary was drawn based on observations of topographic changes and distinct break in vegetation community from FAC and FACW indicator species to FAC and FACU species.

SOIL

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

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

[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 MLRLA 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:

Soils were not evaluated in the "No Dig" zone and were assumed to be non-hydric based on change in vegetation communities, lack of surface hydrology and best professional judgement.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 ___ Depth (inches): ___

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" area. Upland plot is topographically slightly upgradient of wetland plot and the plots are separated by a stream that drains water to the east.

Additional Reference Data: Photos

Photo Name: Photo_231106133551

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/6/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W2-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area. No soils or subsurface hydrology were evaluated; hydric soils are assumed based on strong hydrophytic vegetation and clear evidence of wetland hydrology. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. Wetland located at the toe of slope in a narrow depressional area. Wetland extends offsite upslope and to the north and west of survey area.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Juncus effusus	45	Yes	FACW
2.	Juncus dudleyi	15	Yes	FAC
3.	Poa spp.	15	Yes	FAC
4.	Madia glomerata	10	No	FACU
5.	Galium spp.	5	No	FAC
6.	Phalaris arundinacea	5	No	FACW
7.				
8.				
9.				
10.				
11.				
		95	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
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		x1=	
FACW species	50	x2=	100
FAC species	35	x3=	105
FACU species	10	x4=	40
UPL species		x5=	0
Column Totals:	95 (A)		245 (B)

Prevalence Index = B/A= 2.58

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried herb canopy adjacent to parking area. Bare ground is primarily covered by very slow-moving water. Sample plot meets dominance test for hydrophytic vegetation.

SOIL

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

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

[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 MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Soils were not excavated in this area. Hydric soils assumed based on observations of hydrophytic vegetation, wetland hydrology, geomorphic position and recent aerial images.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 8.00

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

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" area. Standing water approximately 8 inches deep in deepest area. Raised hummocks of upland species extend into wetland. Pot meets primary wetland hydrology indicators for surface water (A1), and secondary indicators for geomorphic position (D2) and FAC-neutral test (D5).

Additional Reference Data: Photos

Photo Name: Photo_231106125733

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/6/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W2-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 1

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area. No soils or subsurface hydrology were evaluated. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. Vegetation within sample plot meets hydrophytic vegetation criteria.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum	(Plot size: 30 feet)			
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Agrostis scabra	30	Yes	FAC
2.	Poa spp.	30	Yes	FAC
3.	Cichorium intybus	25	Yes	FACU
4.	Parentucellia viscosa	10	No	FAC
5.	Vicia americana	5	No	FAC
6.	Cynosurus echinatus	5	No	UPL
7.	Phalaris arundinacea	3	No	FACW
8.				
9.				
10.				
11.				
		108	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 0

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: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x1=	____
FACW species	3	x2=	6
FAC species	75	x3=	225
FACU species	25	x4=	100
UPL species	5	x5=	25
Column Totals:	108 (A)		356 (B)

Prevalence Index = B/A= 3.30

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried herb layer. Sample plot meets the dominance test for hydrophytic vegetation. Wetland boundary was drawn based on observations of topographic changes and break in vegetation community from FAC and FACW indicator species to FAC and FACU species.

SOIL

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

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

[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 MLRLA 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:

Soils were not evaluated in the "No Dig" zone and were assumed to be non-hydric based on change in vegetation communities, lack of surface hydrology and best professional judgement.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 ___ Depth (inches): ___

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" area. Upland plot is topographically upgradient of wetland; no hydrology indicators were observed in this area.

Additional Reference Data: Photos

Photo Name: Photo_231106130950

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/6/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W2-P3 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area. No soils or subsurface hydrology were evaluated; hydric soils are assumed based on strong hydrophytic vegetation and clear evidence of wetland hydrology. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. This wetland becomes channelized and discharges to Stream 13.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum	(Plot size: 30 feet)			
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Juncus effusus	40	Yes	FACW
2.	Agrostis scabra	35	Yes	FAC
3.	Lolium perenne	10	No	FAC
4.	Vicia americana	5	No	FAC
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		90	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 10

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		x1=	
FACW species	40	x2=	80
FAC species	50	x3=	150
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	90 (A)		230 (B)

Prevalence Index = B/A= 2.56

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Bare ground observed in areas of inundation. Sample plot meets dominance test for hydrophytic vegetation.

SOIL

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

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

[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 MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Soils were not excavated in this area. Hydric soils assumed based on observations of hydrophytic vegetation, wetland hydrology, geomorphic position and recent aerial images.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 6.00
Water Table Present?	Yes	___	No	___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes	___	No	___	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" area. Wetland plot meets primary wetland indicator for surface water (A1), and secondary indicators for geomorphic position (D2) and FAC-neutral test (D5). Slow moving surface water to a depth of 6 inches.

Additional Reference Data: Photos

Photo Name: Photo_231106135851

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/6/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W2-P4 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area. No soils or subsurface hydrology were evaluated. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum	(Plot size: 30 feet)			
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Cichorium intybus	35	Yes	FACU
2.	Agrostis scabra	30	Yes	FAC
3.	Plantago lanceolata	15	No	FACU
4.	Lolium perenne	10	No	FAC
5.	Trifolium repens	10	No	FAC
6.				
7.				
8.				
9.				
10.				
11.				
		100	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 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		x1=	
FACW species		x2=	0
FAC species	50	x3=	150
FACU species	50	x4=	200
UPL species		x5=	0
Column Totals:	100 (A)		350 (B)

Prevalence Index = B/A= 3.50

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Sample plot does not meet any indicators for hydrophytic vegetation. Wetland boundary drawn based on direct field observations including topographic break and change in vegetative community.

SOIL

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

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

[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 MLRLA 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:

Soils were not evaluated in the "No Dig" zone and were assumed to be non-hydric based on change in vegetation communities, lack of surface hydrology and best professional judgement.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 ___ Depth (inches): ___

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

Subsurface hydrology was not evaluated in the "No Dig" area. An ephemeral stream (Stream 13) drains Wetland 2 and occurs adjacent but outside upland sample plot, approximately 6 inches of water present at the time of survey.

Additional Reference Data: Photos

Photo Name: Photo_231106140545

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/7/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W3-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 10

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland 3 occurs in a "No Dig" zone at Hamilton Island Recreation Area. No soils or subsurface hydrology were evaluated; hydric soils are assumed based on presence of hydrophytic vegetation and clear evidence of wetland hydrology. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. Wetland 3 is located within a depression at the base of a small ravine that slopes downgradient to Ft. Cascades Drive.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Alnus rubra	20	Yes	FAC
2.			
3.			
4.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	40	Yes	FAC
2. Salix spp.	20	Yes	FAC
3.			
4.			
5.			
	60	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Agrostis scabra	10	Yes	FAC
2. Festuca rubra	10	Yes	FAC
3. Schedonorus arundinaceus	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	0
FAC species	110	x3=	330
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	110 (A)		330 (B)

Prevalence Index = B/A= 3.00

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried vegetative canopy; approximately 20% of ground cover was comprised of unidentified mosses. Sample plot located in area of distinct change in vegetative community and meets dominance test for hydrophytic vegetation.

SOIL

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

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

[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 MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Soils were not excavated in this area. Hydric soils assumed based on observations of hydrophytic vegetation, wetland hydrology, geomorphic position and recent aerial images.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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)

- X Water Stained Leaves (B9) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 X No ___ Depth (inches): 3.00

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

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" zone. Pooled water discharges to manmade drain. Water depth would not exceed more than a few inches. Wetland plot meets primary wetland indicators for surface water (A1) and secondary indicators for water stained leaves (B9) and geomorphic position (D2).

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/7/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W3-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 10

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area; no soils or subsurface hydrology were evaluated. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. Upland sample plot is located upslope of the Wetland 3 depression.

VEGETATION – Use scientific names of plants.

		Absolute	Dominant	Indicator
Tree Statum	(Plot size: 30 feet)	% Cover	Species?	Status
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.	Rubus armeniacus	50	Yes	FAC
2.				
3.				
4.				
5.				
		50	= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Schedonorus arundinaceus	30	Yes	FAC
2.	Agrostis scabra	10	Yes	FAC
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		40	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 60

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		x1=	
FACW species		x2=	0
FAC species	105	x3=	315
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	105 (A)		315 (B)

Prevalence Index = B/A= 3.00

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Moss coverage included in bare ground. Sample plot meets dominance test for hydrophytic vegetation. Large percentage of bare ground attributed to moss and blackberry coverage.

SOIL

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

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

[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 MLRLA 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:

Soils were not evaluated in the "No Dig" zone and were assumed to be non-hydric based on change in vegetation communities, lack of surface hydrology and best professional judgement.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 ___ Depth (inches): ___

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" zone. Upland plot is topographically slightly upgradient of wetland plot. No hydrology indicators observed at the time of survey.

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/7/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W4-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area. No soils or subsurface hydrology were evaluated; hydric soils are assumed based on presence of hydrophytic vegetation and clear evidence of wetland hydrology. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. Wetland located at the toe of slope in a narrow depressional area.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)			
1. Populus balsamifera	20	Yes	FAC
2.			
3.			
4.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Schedonorus arundinaceus	25	Yes	FAC
2. Agrostis spp.	20	Yes	FAC
3. Bromus tectorum	15	Yes	UPL
4. Vicia americana	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	0
FAC species	80	x3=	240
FACU species		x4=	0
UPL species	15	x5=	75
Column Totals:	95 (A)		315 (B)

Prevalence Index = B/A= 3.32

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried canopy. No vegetation observed in center of depressions where water is slowest and deepest, and minimal sunlight reaches. Sample plot meets dominance test for hydrophytic vegetation.

SOIL

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

[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 MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Soils were not excavated in this area. Hydric soils assumed based on observations of hydrophytic vegetation, wetland hydrology, geomorphic position and recent aerial images.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 X No ___ Depth (inches): 2.00

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

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" zone. Hydrology inputs are received from Stream 1 and precipitation runoff from hills upslope. Water slows significantly and pools in this area before discharging to Stream 1, downstream of Wetland 4. Wetland plot meets primary wetland indicators for surface water (A1), and secondary indicators for drainage patterns (B10) and geomorphic position (D2).

Additional Reference Data: Photos

Photo Name: Photo_231106162230

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/7/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling [redacted] W4-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Convex | Slope(%): 10

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area; no soils or subsurface hydrology were evaluated. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. This upland data plot is located on the slope up towards Ft. Cascades Drive between the road and the wetland. Vegetation meet dominance test for hydrophytic vegetation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)			
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	15	Yes	FAC
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Schedonorus arundinaceus	45	Yes	FAC
2. Cichorium intybus	30	Yes	FACU
3. Plantago lanceolata	10	No	FACU
4. Taraxacum officinale	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 10

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: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	0
FAC species	60	x3=	180
FACU species	45	x4=	180
UPL species		x5=	0
Column Totals:	105 (A)		360 (B)

Prevalence Index = B/A= 3.43

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Moss coverage included in bare ground. Sample plot meets the dominance test for hydrophytic vegetation. Wetland boundary was drawn based on observations of topographic changes and distinct break in vegetation community from FAC indicator species to FAC and FACU species.

SOIL

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

[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 MLRLA 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:

Soils were not evaluated in the "No Dig" zone and were assumed to be non-hydric based on change in vegetation communities, lack of surface hydrology and best professional judgement.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 ___ Depth (inches): ___

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

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" zone. No primary or secondary indicators of surface hydrology present. Upland plot is topographically upgradient of wetland plot.

Additional Reference Data: Photos

Photo Name: Photo_231106163912

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/7/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W4-P3 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area. No soils or subsurface hydrology were evaluated; hydric soils are assumed based on the presence of hydrophytic vegetation and clear evidence of wetland hydrology. Wetland boundary was conservatively estimated using field observations, topography, aerial imagery and best professional judgement. This wetland was formed by a change in topography creating a depressional area for flow from Stream 1 to collect and pool.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Populus balsamifera	35	Yes	FAC
2.			
3.			
4.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	70	Yes	FAC
2.			
3.			
4.			
5.			
	70	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Lotus corniculatus	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
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: 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		x1=	
FACW species		x2=	0
FAC species	125	x3=	375
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	125 (A)		375 (B)

Prevalence Index = B/A= 3.00

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

The sample plot meets the dominance test for hydrophytic vegetation. Bare ground attributed to moss and blackberry cover.

SOIL

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

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

[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 MLRLA 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 X No ___

Remarks:

Soils were not excavated in this area. Hydric soils assumed based on observations of hydrophytic vegetation, wetland hydrology, geomorphic position and recent aerial images.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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)

- X Water Stained Leaves (B9) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 X No ___ Depth (inches): 9.00

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

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes X No** ___

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" zone. Hydrology is received from Stream 1 and precipitation runoff from upslope hills. Wetland plot meets primary wetland indicators for surface water (A1), and secondary indicators for water stained leaves (B9) and geomorphic position (D2).

Additional Reference Data: Photos

Photo Name: Photo_231107104637

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/7/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W4-P4 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Convex | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland occurs in a "No Dig" zone at Hamilton Island Recreation Area; no soils or subsurface hydrology were evaluated at sample plot. Plot is located on a short slope between the wetland and Ft. Cascades Road roughly one foot in vertical elevation above wetland plot in this location.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)			
1. Populus balsamifera	10	Yes	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	55	Yes	FAC
2. Populus balsamifera	10	No	FAC
3.			
4.			
5.			
	65	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Lotus corniculatus	20	Yes	FAC
2. Agrostis scabra	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 15

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		x1=	
FACW species		x2=	0
FAC species	105	x3=	315
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	105 (A)		315 (B)

Prevalence Index = B/A= 3.00

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

The sample plot meets the dominance test indicator for hydrophytic vegetation.

SOIL

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

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

[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 MLRLA 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:

Soils were not evaluated in the "No Dig" zone and were assumed to be non-hydric based on change in vegetation communities, lack of surface hydrology and best professional judgement.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 ___ Depth (inches): ___

Saturation Present? Yes ___ No ___ Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

Subsurface hydrology was not evaluated within the "No Dig" zone. Upland plot is topographically upgradient of wetland plot. No primary or secondary indicators of surface hydrology present.

Additional Reference Data: Photos

Photo Name: Photo_231107104909

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 4/20/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling W9-P1 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 30 to 65 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If No, explain in Remarks)

Are Vegetation: X Soil X or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation: ___ Soil ___ or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ___	
Hydric Soil Present?	Yes ___	No X	**Is the Sampled Area**
Wetland Hydrology Present?	Yes ___	No X	**within a Wetland?** Yes ___ No X

Remarks:

Precipitation analysis showed drier than normal conditions in the three months prior to the delineation. Utility-related disturbance at the eastern wetland boundary likely occurred 8-10 months prior to the delineation. Vegetation and soils are significantly disturbed. Wetland was delineated using alternative methodology outlined in the 1987 Corps manual and WVMC regional supplement and noted in appropriate section of the data form.

VEGETATION – Use scientific names of plants.

Tree Statum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Poa spp.	5	Yes	FAC
2. Cirsium arvense	1	No	FAC
3. Phalaris arundinacea	1	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	7	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 93

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species	1	x2=	2
FAC species	6	x3=	18
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	7 (A)		20 (B)

Prevalence Index = B/A= 2.86

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

Vegetation is currently being reestablished following a recent utility excavation in which all vegetation was removed. Poa spp. could not be identified to genus at the time of the survey, assumed facultative species. According to recent ground-level images, prior to disturbance the dominant vegetation cover was Himalayan blackberry and St. John's wort. The sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	100					Sandy Loam	Gravelly fill material
8-18	10YR 4/2	100					Sandy Loam	Gravelly fill material

[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 MLRLA 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: Large rocks and cobbles

Depth (inches): 18

Hydric Soil Present? Yes ___ No X

Remarks:

The upper 8 to 12 inches of soil throughout this entire area is very rocky, with large cobbles present and may be fill material associated with recent utility work. Soil pit dug at the edge of restoration area. Soils taken down to 18 inches to evaluate natural soil profile. Shovel refuse at 18 inches. No hydric soil indicators were observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 Date (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The soil pit was dug slightly just upslope of the wetland plot. Hydrology does not appear to be significantly disturbed by recent excavation and grading in the area. No primary or secondary indicators of wetland hydrology present.

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 4/20/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W9-P2 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 30 to 65 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If No, explain in Remarks)

Are Vegetation: X Soil X or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation: ___ Soil ___ or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ___		
Hydric Soil Present?	Yes X	No ___	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes X	No ___	**within a Wetland?**	Yes X No ___

Remarks:

Precipitation analysis showed drier than normal conditions in the three months prior to the delineation. Vegetation and soils are significantly altered from utility-related disturbance which likely occurred 8-10 months prior to the delineation. Wetland was delineated using alternative methodology outlined in the 1987 Corps manual and WVMC regional supplement and noted in appropriate section of data form.

VEGETATION – Use scientific names of plants.

		Absolute	Dominant	Indicator
Tree Statum	(Plot size: 30 feet)	% Cover	Species?	Status
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.	Rubus armeniacus	3	Yes	FAC
2.				
3.				
4.				
5.				
		3	= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Phalaris arundinacea	10	Yes	FACW
2.	Typha latifolia	2	No	OBL
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		12	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 85

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	x1=	2
FACW species	10	x2=	20
FAC species	6	x3=	18
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	18 (A)		40 (B)

Prevalence Index = B/A= 2.22

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

Sparse vegetation reestablishment on recently disturbed soils in which all vegetation was removed. According to recent ground-level images, the wetland boundary was dominated by broadleaf cattail, reed canary grass and Himalayan blackberry at the upland edge. The sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	60					Loamy Sand	Gravelly fill material
	10YR 4/2	40						

[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 MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: Large rocks and cobbles

Depth (inches): 12

Hydric Soil Present? Yes X No ___

Remarks:

A restrictive layer of large rocks and cobbles occurs 12 inches below ground surface. Multiple soil horizons removed during utility work; soils mainly fill. Per the Regional Supplement guidance for problematic soils, hydric soils were determined by 1) presence of hydrophytic vegetation, 2) strong primary and secondary hydrology indicators met, 3) wetland occurs in an area likely to collect and retain water, 4) field observations and desktop resources indicate hydric soils were likely present at this location prior to ground disturbance.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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	X	No	___	Depth (inches): 12.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Hydrology inputs are primarily received from Stream 3 and do not appear to be altered by recent utility work at the eastern boundary. Sample plot meets primary wetland hydrology indicators for surface water (A1), saturation (A2), and secondary indicators for geomorphic position (D2) and the FAC-neutral test (D5) are met.

Additional Reference Data: Photos

Photo Name: Photo_230420162839

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 4/20/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W9-P3 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 0

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 30 to 65 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Precipitation analysis showed drier than normal conditions in the three months prior to the delineation. Wetland located at the toe of slope in a narrow depressional area. All three wetland criteria are met.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Fraxinus latifolia	70	Yes	FACW
2. Alnus rubra	25	Yes	FAC
3.			
4.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Cornus alba	15	Yes	FACW
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Oenanthe sarmentosa	70	Yes	OBL
2. Equisetum arvense	30	Yes	FAC
3. Phalaris arundinacea	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	10	Yes	FAC
2.			
	10	= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x1=	70
FACW species	95	x2=	190
FAC species	65	x3=	195
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	230 (A)		455 (B)

Prevalence Index = B/A= 1.98

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried vegetation layers. Bare ground associated with inundated areas lacking herbaceous vegetation. Sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	100					Loam	Mucky modified 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)
- X Loamy Mucky Mineral (F1) (except MLRLA 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: Roots

Depth (inches): 16

Hydric Soil Present? Yes X No ___

Remarks:

Shovel refusal at 16 inches due to large roots. Soils had muck qualities of visible fibers in the upper horizons and greasy feeling texture. Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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	X	No ___	Depth (inches):	1.00
Water Table Present?	Yes	X	No ___	Depth (inches):	3.0
Saturation Present? (includes capillary fringe)	Yes	X	No ___	Depth (inches):	0.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Wetland meets primary wetland hydrology indicators for surface water (A1), high water table (A2) and saturation (A3). Secondary indicators for drainage patterns (B10) and geomorphic position (D2) are met.

Additional Reference Data: Photos

Photo Name: Photo_230420165721

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 4/21/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W9-P4 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: T2N R7E S14

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 0

Subregion (LRR): A - Northwest Forest and | Lat: 45.657120 | Long: -121.909737 | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 30 to 65 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Precipitation analysis showed drier than normal conditions in the three months prior to the delineation; soil pits dug as deep as possible to evaluate hydrology. Sample plot meets the criteria for hydrophytic vegetation but lacks hydric soil and wetland hydrology indicators.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Fraxinus latifolia	5	Yes	FACW
2.			
3.			
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Urtica dioica	1	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	1	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	99	Yes	FAC
2.			
	99	= Total Cover	

% Bare Ground in Herb Stratum 0

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		x1=	
FACW species	5	x2=	10
FAC species	100	x3=	300
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	105 (A)		310 (B)

Prevalence Index = B/A= 2.95

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Sample plot meets the dominance test for hydrophytic vegetation. Blackberry coverage low growing and very dense; very little herbaceous growth in sample plot.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/1	100					Sandy 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 MLRLA 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:

No hydric soil criteria are met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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? Yes ___ No X Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

Soil somewhat saturated at the surface due to heavy rainfall incurred at the time of the survey. No primary or secondary indicators of wetland hydrology are present.

Additional Reference Data: Photos

Photo Name: Photo_230420171156

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/7/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W10-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): Concave | Slope(%): 0

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland 10 is a small depressional wetland located north of and impounded by Ash Lake Road. Sample plot meets indicators for hydrophytic vegetation, hydric soils and wetland hydrology.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Fraxinus latifolia	55	Yes	FACW
2. Alnus rubra	10	No	FAC
3.			
4.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	25	Yes	FAC
2. Ribes divaricatum	10	Yes	FAC
3.			
4.			
5.			
	35	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Phalaris arundinacea	35	Yes	FACW
2. Solanum dulcamara	5	No	FAC
3. Daucus carota	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 55

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		x1=	
FACW species	90	x2=	180
FAC species	50	x3=	150
FACU species	5	x4=	20
UPL species		x5=	0
Column Totals:	145 (A)		350 (B)

Prevalence Index = B/A= 2.41

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried vegetation layers. Sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 2/1	100					Silt Loam	
2-8	10YR 3/1	100					Clay Loam	
8-24	2.5Y 3/2	90	7.5YR 3/3	8	C	M	Clay Loam	
			5YR 3/4	2	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRLA 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:

Sample plot meets hydric soil indicator for redox dark surface (F6).

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 5.00
Water Table Present?	Yes	X	No	___	Depth (inches): 5.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Shallow surface water is present adjacent to soil pit. Sample plot meets primary wetland hydrology indicators for surface water (A1), high water table (A2) and saturation (A3), and secondary indicators for geomorphic position (D2) and the FAC-neutral test (D5).

Additional Reference Data: Photos

Photo Name: Photo_231107145013

Photo Name: Photo_231107145042

Photo Name: Photo_231107145024

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/7/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W10-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): Convex | Slope(%): 5

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Sample plot taken in upland area adjacent to Ash Lake Road. Wetland hydrology indicator is met but assumed to be a false positive for hydrology due to higher-than-normal precipitation received in the area in the days prior to the field investigation and not likely to persist.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Lapsana communis	60	Yes	FACU
2.	Centaurea cyanus	10	No	FACU
3.	Polystichum munitum	5	No	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		75	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 25

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		x1=	
FACW species		x2=	0
FAC species		x3=	0
FACU species	75	x4=	300
UPL species		x5=	0
Column Totals:	75 (A)		300 (B)

Prevalence Index = B/A= 4.00

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Hydrophytic vegetation is not present in the sample plot.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/2	100						
15-24	2.5Y 3/1	98	7.5 YR 4/4	2	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRLA 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:

Soils with redox concentrations occur 15 inches below ground surface. Sample plot is close to wetland boundary but not within.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 X No ___ Depth (inches): 7.0

Saturation Present? Yes X No ___ Depth (inches): 10.0

(includes capillary fringe)

Wetland Hydrology Present? **Yes X No** ___

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

Remarks:

Sample plot meets wetland hydrology indicator for high water table (A2) and saturation (A3). High water table is assumed to be a false hydrology indicator due to higher-than-normal precipitation received in the area in the days prior to the field investigation.

Additional Reference Data: Photos

Photo Name: Photo_231107150535

Photo Name: Photo_231107150604

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W11-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): Convex | Slope(%): 10

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland 11 is a small riverine wetland formed on the left and right banks of Stream 7 and is located immediately adjacent to Ash Lake Road. Sample plot met wetland criteria for hydrophytic vegetation, hydric soils and hydrology.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)			
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Acer circinatum	30	Yes	FAC
2. Rubus armeniacus	5	No	FAC
3.			
4.			
5.			
	35	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Impatiens capensis	60	Yes	FACW
2. Equisetum arvense	50	Yes	FAC
3. Geranium robertianum	20	No	FACU
4. Schedonorus arundinaceus	10	No	FAC
5. Phalaris arundinacea	3	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	143	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 15

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		x1=	
FACW species	66	x2=	132
FAC species	95	x3=	285
FACU species	20	x4=	80
UPL species		x5=	0
Column Totals:	181 (A)		497 (B)

Prevalence Index = B/A= 2.75

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried herb layer. Bare ground is attributed to the streambed of Stream 7. The sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Silt Loam	Gravels present
8-16	5Y 3/1	80	7.5YR 4/6	10	C	M	Silt Loam	
	10Y 2.5/1	10						

[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 MLRLA 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:

Soils within the sample plot meet the hydric soil indicator for redox dark surface (F6). Gravels within soil layer likely from relic roadcut and erosion from Stream 7.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	
Water Table Present?	Yes	X	No	___	Depth (inches):	6.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	3.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Surface water from Stream 7 occurs adjacent to sample plot. Sample plot meets primary wetland hydrology indicators for high water table (A2) and saturation (A3), and secondary indicator for FAC-neutral test (D5).

Additional Reference Data: Photos

Photo Name: Photo_231109112544

Photo Name: Photo_231109112516

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W11-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): Concave | Slope(%): 75

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

This data plot was located on the steep slopes adjacent to Wetland 11 and Stream 7. The upland boundary is very abrupt and follows the rise in topography from the active channel. No wetland criteria are met within the sample plot.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Abies grandis	25	Yes	FACU
2. Pseudotsuga menziesii	10	Yes	FACU
3.			
4.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Acer circinatum	60	Yes	FAC
2. Rubus armeniacus	15	Yes	FAC
3.			
4.			
5.			
	75	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Equisetum arvense	40	Yes	FAC
2. Geranium robertianum	30	Yes	FACU
3. Polystichum munitum	15	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 15

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	0
FAC species	115	x3=	345
FACU species	80	x4=	320
UPL species		x5=	0
Column Totals:	195 (A)		665 (B)

Prevalence Index = B/A= 3.41

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Multistoried vegetative canopy. Bare ground is attributed to unvegetated rock and soil on the steep slopes within the sample plot. Sample plot does not meet indicators for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR 3/2	100						

[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 MLRLA 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:

No indicators of hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 X No ___ Depth (inches): 20.0

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

No primary or secondary indicators of wetland hydrology are met.

Additional Reference Data: Photos

Photo Name: Photo_231109114147

Photo Name: Photo_231109114153

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W12-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): Concave | Slope(%): 5

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland 12 is located within slow draining roadside ditch on the upslope (north) side of Ash Lake Road, Wetland conditions do not extend to the west past the culvert. Wetland criteria for hydrophytic vegetation, hydric soils and wetland hydrology are met.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Typha latifolia	25	Yes	OBL
2.	Schedonorus arundinaceus	15	Yes	FAC
3.	Vicia americana	15	Yes	FAC
4.	Daucus carota	15	Yes	FACU
5.	Poa annua	10	No	FAC
6.	Cynodon dactylon	10	No	FACU
7.	Scirpus spp.	5	No	FAC
8.				
9.				
10.				
11.				
		95	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x1=	25
FACW species		x2=	0
FAC species	45	x3=	135
FACU species	25	x4=	100
UPL species		x5=	0
Column Totals:	95 (A)		260 (B)

Prevalence Index = B/A= 2.74

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Observations of vegetation are limited to the ditch and did not extend upslope into road cut. Dominance test for hydrophytic vegetation is met.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	7.5YR 4/1	90	5YR 4/6	5	C	M	Sandy Loam	
			2.5YR 2.5/4	5	C	M		
9-20	7.5YR 4/1	60	2.5YR 2.5/4	5	C	M	Sandy Loam	Gravels present
			5YR 4/4	35	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- X 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 X No ___

Remarks:

Soils meet the depleted matrix (F3) indicator for hydric wetland soils.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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	X	No	___	Depth (inches): 1.00
Water Table Present?	Yes	X	No	___	Depth (inches): 0.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Hydrology is concentrated in a vegetated roadside ditch roughly 4 feet at the widest. Water is very slow moving to culvert located to the west and discharges to Ashes Lake. Sample plot meets primary wetland indicators for surface water (A1), high water table (A2) and saturation (A3).

Additional Reference Data: Photos

Photo Name: Photo_231109130021

Photo Name: Photo_231109130028

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W12-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland plot located upslope of wetland plot outside the influence of the standing water and a distinct change in vegetation is observed. Wetland hydrology indicator is met but assumed to be a false positive for hydrology due to higher-than-normal precipitation received in the area in the days prior to the field investigation and not likely to persist.

VEGETATION – Use scientific names of plants.

Tree Statum (Plot size: 10 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Cynodon dactylon	65	Yes	FACU
2. Poa annua	10	No	FAC
3. Daucus carota	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 15

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		x1=	
FACW species		x2=	0
FAC species	10	x3=	30
FACU species	75	x4=	300
UPL species		x5=	0
Column Totals:	85 (A)		330 (B)

Prevalence Index = B/A= 3.88

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

No criteria for hydrophytic vegetation are met.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 2.5/1	100					Clay Loam	Gravelly
8-16	10YR 3/2	99	10YR 3/6	1	C	M	Clay Loam	
16-24	2.5Y 3/3	90	10YR 3/6	10	C	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 MLRLA 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:

Redox concentration observed but too deep and too bright to meet hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 X No ___ Depth (inches): 7.0

Saturation Present? Yes X No ___ Depth (inches): 3.0

(includes capillary fringe)

Wetland Hydrology Present? **Yes X No** ___

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

Remarks:

High water table (A2) and saturation (A3) is assumed to be a false hydrology indicator due to higher-than-normal precipitation received in the area in the days prior to the field investigation.

Additional Reference Data: Photos

Photo Name: Photo_231109131101

Photo Name: Photo_231109131048

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W13-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland plot located in the westernmost extent of roadside ditch north of Ash Lake Road exhibiting wetland signatures. Positive indicators of hydrophytic vegetation, hydric soils and wetland hydrology are met.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Poa annua	65	Yes	FAC
2.	Phalaris arundinacea	30	Yes	FACW
3.	Dactylis glomerata	5	No	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		100	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 0

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		x1=	
FACW species	30	x2=	60
FAC species	65	x3=	195
FACU species	5	x4=	20
UPL species		x5=	0
Column Totals:	100 (A)		275 (B)

Prevalence Index = B/A= 2.75

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Observations of vegetation are limited to the ditch and did not extend upslope into road cut. Dominance test for hydrophytic vegetation is met.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5 YR 2.5/1	100					Sandy Loam	
5-20	2.5Y 4/2	65	10YR 4/6	35	C	M	Sandy 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 MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- X 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 X No ___

Remarks:

Hydric soil indicator for depleted matrix (F3) is met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	
Water Table Present?	Yes	X	No	___	Depth (inches):	10.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	4.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Hydrology is mainly attributed to inputs from Stream 10 but also precipitation runoff from hills upslope and adjacent roadway. Primary hydrology indicators are met for high water table (A2) and saturation (A3). One secondary hydrology indicator for the FAC-neutral test is met.

Additional Reference Data: Photos

Photo Name: Photo_231109143352

Photo Name: Photo_231109143343

Photo Name: Photo_231109143402

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W13-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland plot located west of wetland plot by roughly 10 feet where a distinct change in vegetation is observed. No wetland indicators are met.

VEGETATION – Use scientific names of plants.

Tree Statum (Plot size: 10 feet)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Dactylis glomerata	70	Yes	FACU
2.	Poa annua	15	No	FAC
3.	Phalaris arundinacea	10	No	FACW
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		95	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 5

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		x1=	
FACW species	10	x2=	20
FAC species	15	x3=	45
FACU species	70	x4=	280
UPL species		x5=	0
Column Totals:	95 (A)		345 (B)

Prevalence Index = B/A= 3.63

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

No criteria for hydrophytic vegetation are met.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	100						
8-22	2.5Y 4/2	100					Sandy 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 MLRLA 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:

No hydric soils are met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 X	No ___	Depth (inches):	16.0	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	15.0	**Wetland Hydrology Present?** Yes ___ No X

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

Remarks:

No hydrology signatures observed in data plot. Water table and saturation are too deep meet any primary or secondary indicators of wetland hydrology.

Additional Reference Data: Photos

Photo Name: Photo_231109145230

Photo Name: Photo_231109144406

Photo Name: Photo_231109144510

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W14-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Not mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland 14 occurs is a depressional area adjacent to Ashes Lake and roughly 30 feet below grade of Ash Lake Road and SR-14. This wetland and Wetland 15 located upstream and to the east were likely one wetland prior to the construction of Ash Lake Road. Stream 11 drains the wetland into Ashes Lake and is classified by the NWI as a R5UBH water. Sample plot meets wetland criteria for hydrophytic vegetation, hydric soils and hydrology.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 3m)	% Cover	Species?	Status
1. Alnus rubra	20	Yes	FAC
2.			
3.			
4.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2m)			
1. Rubus armeniacus	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Typha latifolia	60	Yes	OBL
2. Phalaris arundinacea	35	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 2m)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 5

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	60	x1=	60
FACW species	35	x2=	70
FAC species	25	x3=	75
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	120 (A)		205 (B)

Prevalence Index = B/A= 1.71

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried vegetation canopy. Vegetation within sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/2	93	7.5YR4/6	7		M	Loam	Mucky modified
8-22	5Y3/1	100					Loam	Mucky modified

[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)
- X Loamy Mucky Mineral (F1) (except MLRLA 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:

Soils are comprised of mucky modified organic material with high content of visible fibers and a greasy/plastic texture. Redox was observed as concentrations in the matrix as well as along root channels and pore linings. Soils within the sample plot meet hydric soil criteria for loamy mucky mineral (F1) and redox dark surface (F6).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	
Water Table Present?	Yes	X	No	___	Depth (inches):	7.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	4.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Hydrology within the wetland drains to Stream 11 and Ashes Lake. The sample plot meets primary wetland hydrology requirements for high water table (A2), saturation (A3) and hydrogen sulfide odor (C1). Secondary wetland hydrology indicator for FAC-neutral test (D5) is also met.

Additional Reference Data: Photos

Photo Name: Photo_231110094620

Photo Name: Photo_231110094549

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W14-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): None | Slope(%): 50

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland data plot was taken upslope of wetland boundary, roughly 20 feet below the road grade of Ash Lake Road. Hydrophytic vegetation is present within the sample plot but no wetland indicators for hydric soils nor hydrology are met.

VEGETATION – Use scientific names of plants.

Tree Statum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	10		FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	90	Yes	FAC
2.			
3.			
4.			
5.			
	90	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Phalaris arundinacea	7	Yes	FACW
2. Equisetum arvense	3	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 90

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		x1=	
FACW species	7	x2=	14
FAC species	103	x3=	309
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	110 (A)		323 (B)

Prevalence Index = B/A= 2.93

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Vegetation observed within sample plot meet the dominance test for hydrophytic vegetation. High percentage of bare ground attributed to mainly blackberry growth on roadbed fill material.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y3/2	100					Clay Loam	Gravelly
14-18	2.5Y5/1	30					Clay Loam	Gravelly
	2.5Y3/2	68	10YR4/4	2		M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRLA 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:

Gravels in soil due to proximity of sample plot to roadbed of Ash Lake Road. Soils do not meet A11 because depleted layer starts too deep nor A12 because soils colors in top layer are too bright. No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 18.0

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

Saturation present at 18 inches, soil pit was open for 20 minutes. Sample plot meets one secondary wetland hydrology indicator for FAC-neutral test (D5).

Additional Reference Data: Photos

Photo Name: Photo_231110100437

Photo Name: Photo_231110100459

Photo Name: Photo_231110100426

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W15-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes; Arents, 0 to 5 | NWI Classification: Not mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland 15 occurs is a depressional area roughly 30 feet below grade of Ash Lake Road and SR-14. This wetland and Wetland 14 located downstream and to the west were likely one wetland prior to the construction of Ash Lake Road. Stream 11 drains the wetland via a culvert beneath the road into Ashes Lakes and is classified by the NWI as a R5UBH water. Sample plot meets wetland criteria for hydrophytic vegetation, hydric soils and hydrology.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum	(Plot size: 30 feet)			
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Phalaris arundinacea	90	Yes	FACW
2.	Juncus effusus	10	No	FACW
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		100	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species	100	x2=	200
FAC species		x3=	0
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A= 2.00

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Sample plot meets the dominance test for hydrophytic vegetation. The forested riparian corridor at the northern boundary of wetland is comprised mainly of red alder (Alnus rubra, FAC), bigleaf maple (Acer macrophyllum, FACU), Oregon ash (Fraxinus latifolia, FACW) and vine maple (Acer circinatum, FAC).

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/2	100					Organic	Mucky peat
8-14	2.5Y4/1	85	7.5YR4/6	15	C	M	Sandy Loam	Mucky mineral, organics present
14-20	5Y4/1	90	7.5YR4/6	10	C	RC	Sandy Clay Loam	Mucky mineral, organics present

[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)
- X Loamy Mucky Mineral (F1) (except MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- X 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 X No ___

Remarks:

Soils are comprised of mucky peat and organic material with visible fibers and greasy texture in the upper layers. Soils within the sample plot meet hydric soil criteria for loamy mucky mineral soils (F1) and depleted matrix (F3).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 X No ___ Depth (inches): 10.0

Saturation Present? Yes X No ___ Depth (inches): 7.0

(includes capillary fringe)

Wetland Hydrology Present? **Yes X No** ___

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

Remarks:

Hydrology within the wetland drains to Stream 11 and Ashes Lake. The sample plot meets primary wetland hydrology requirements for high water table (A2) and saturation (A3).

Additional Reference Data: Photos

Photo Name: Photo_231109153523

Photo Name: Photo_231109153613

Photo Name: Photo_231109153535

Additional Reference Data: Photos

Photo Name: Photo_231109153638

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W15-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): None | Slope(%): 50

Subregion (LRR): Northwest Forest and Coasts | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes; Arents, 0 to 5 | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If No, explain in Remarks)

Are Vegetation: ___ Soil ___ or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation: ___ Soil ___ or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ___	No X	
Hydric Soil Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Wetland Hydrology Present?	Yes ___	No X	

Remarks:

Upland data plot is located on a toe of road fill slope, which is steeply graded, roughly 30 feet below roadbed and located roughly 3 feet from wetland plot.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Rubus ursinus	50	Yes	FACU
2.	Cirsium arvense	25	Yes	FAC
3.	Equisetum arvense	10	No	FAC
4.	Phalaris arundinacea	5	No	FACW
5.	Equisetum hyemale	1	No	FACW
6.				
7.				
8.				
9.				
10.				
11.				
		91	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 9

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		x1=	
FACW species	6	x2=	12
FAC species	35	x3=	105
FACU species	50	x4=	200
UPL species		x5=	0
Column Totals:	91 (A)		317 (B)

Prevalence Index = B/A= 3.48

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 data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

Bare ground is dead reed canarygrass and horsetail likely from roadside maintenance activities. No indicators of hydrophytic vegetation are met.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	100					Sandy Loam	Cobble and rip rap from road bed

[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 MLRLA 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: Rock/cobble/riprap

Depth (inches): 6

Hydric Soil Present? Yes ___ No X

Remarks:

Shovel refuse at 6 inches due to presence of compacted roadbed material.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 Date (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology present within sample plot.

Additional Reference Data: Photos

Photo Name: Photo_231109155319

Photo Name: Photo_231109155258

Photo Name: Photo_231109155312

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling [redacted] W16-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Channel | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): Northwest Forest and Coasts | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Sample plot located at the western boundary of wetland signatures located in roadside ditch draining to the southwest. Signatures were somewhat intermittent east of the plot. Wetland criteria for hydrophytic vegetation, hydric soils and hydrology are met.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Holcus lanatus	35	Yes	FAC
2.	Juncus ensifolius	35	Yes	FACW
3.	Typha latifolia	10	No	OBL
4.	Epilobium ciliatum	5	No	FACW
5.	Cynodon dactylon	3	No	FACU
6.	Vicia americana	2	No	FAC
7.	Senecio jacobaea	2	No	FACU
8.	Juncus effusus	2	No	FACW
9.	Daucus carota	1	No	FACU
10.				
11.				
		95	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 5

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	10	x1=	10
FACW species	42	x2=	84
FAC species	37	x3=	111
FACU species	6	x4=	24
UPL species		x5=	0
Column Totals:	95 (A)		229 (B)

Prevalence Index = B/A= 2.41

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Wetland vegetation was confined to lowest topographic location within ditch. Sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100						
8-20	10YR 3/2	60	2.5 YR 3/3	40	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRLA 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:

Soils within sample plot meet the hydric soil indicator for redox dark surface (F6).

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No ___	Depth (inches):	1.00
Water Table Present?	Yes	X	No ___	Depth (inches):	0.0
Saturation Present? (includes capillary fringe)	Yes	X	No ___	Depth (inches):	0.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Hydrology received primarily from precipitation runoff from hills upslope, high water table and roadway runoff. Sample plot meets the primary indicators of wetland hydrology for surface water (A1), high water table (A2) and saturation (A3), and a secondary indicator for FAC-neutral test (D5).

Additional Reference Data: Photos

Photo Name: Photo_231110104435

Photo Name: Photo_231110104410

Photo Name: Photo_231110104442

Additional Reference Data: Photos

Photo Name: Photo_231110104420

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling [redacted]: W16-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range [redacted]

Landform (hillslope, terrace, etc.): Channel | Local Relief (concave, convex, none): Concave | Slope(%): 5

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland sample plot located at western boundary of ditch with wetland signatures. Indicators of wetland hydrology are met but assumed to be a false positive for hydrology due to higher-than-normal precipitation received in the area in the days prior to the field investigation and not likely to persist. No hydric soils nor hydrophytic vegetation observed.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Poa annua	30	Yes	FAC
2.	Daucus carota	30	Yes	FACU
3.	Cynodon dactylon	25	Yes	FACU
4.	Holcus lanatus	5	No	FAC
5.	Vicia americana	5	No	FAC
6.	Lactuca serriola	3	No	FACU
7.	Juncus effusus	2	No	FACW
8.				
9.				
10.				
11.				
		100	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species	2	x2=	4
FAC species	40	x3=	120
FACU species	58	x4=	232
UPL species		x5=	0
Column Totals:	100 (A)		356 (B)

Prevalence Index = B/A= 3.56

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Vegetation is dominated by upland species; no indicators for hydrophytic vegetation met.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR2/2	100					Sandy Loam	
12-22	2.5Y3/1	90					Sandy Loam	Gravels
	10YR3/3	10						

[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 MLRLA 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:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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	X	No	___	Depth (inches): 1.00
Water Table Present?	Yes	X	No	___	Depth (inches): 0.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0.0

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

Hydrology is attributed to recent heavy rains, roadway runoff and drainage from upslope wetland. No evidence to inundation on a regular and prolonged basis. Sample plot meets primary wetland hydrology indicators for surface water (A1), high water table (A2), and saturation (A3).

Additional Reference Data: Photos

Photo Name: Photo_231110110411

Photo Name: Photo_231110110420

Photo Name: Photo_231110110404

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W16-P3 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Channel | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Sample plot taken at the eastern (upstream) boundary of the Wetland 16. Indicators of hydrophytic vegetation, hydric soils and wetland hydrology are met.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Holcus lanatus	45	Yes	FAC
2.	Phalaris arundinacea	20	Yes	FACW
3.	Carex spp.	15	No	FACW
4.	Equisetum arvense	10	No	FAC
5.	Typha latifolia	10	No	OBL
6.	Veronica americana	10	No	OBL
7.	Medicago lupulina	5	No	FACU
8.	Juncus ensifolius	5	No	FACW
9.				
10.				
11.				
		120	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 0

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	x1=	20
FACW species	40	x2=	80
FAC species	55	x3=	165
FACU species	5	x4=	20
UPL species		x5=	0
Column Totals:	120 (A)		285 (B)

Prevalence Index = B/A= 2.38

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried herb layer. Area was also observed in the April site visit; algal mats and a relatively high occurrence of Persicaria hydropiper and Veronia americana were present at that time but were absent at November survey. Sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR2/2	100					Loam	Organics with gravel
8-10	5B 2.5/1	40	2.5YR 4/2	20	C	M	Sandy Loam	Gravelly with cobbles
	10GY 3/1	25	10YR 5/4	10	C	M		
10-15	5B 2.5/1	50	10YR 3/2	10	C	M	Sandy Loam	Gravelly with cobbles
	10GY 3/1	40						

[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 MLRLA 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:

Sample plot meets the hydric soil indicator for redox dark surface (F6).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	
Water Table Present?	Yes	X	No	___	Depth (inches):	7.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Hydrology is mainly attributed to runoff from hills upslope, high water table and roadway runoff. Sample plot meets primary wetland hydrology indicators for high water table (A2) and saturation (A3), and secondary indicator for FAC-neutral test (D5).

Additional Reference Data: Photos

Photo Name: Photo_231110114203

Photo Name: Photo_231110114817

Photo Name: Photo_231110114212

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W16-P4 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Channel | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland plot established just upgradient of wetland plot where a distinct change in vegetation occurs. Indicators of hydrophytic vegetation observed and wetland hydrology is met but are attributed to recent heavy rainfall; no hydric soils indicators are met.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Poa annua	30	Yes	FAC
2.	Phalaris arundinacea	25	Yes	FACW
3.	Holcus lanatus	20	Yes	FAC
4.	Vicia americana	10	No	FAC
5.	Medicago lupulina	10	No	FACU
6.	Daucus carota	5	No	FACU
7.				
8.				
9.				
10.				
11.				
		100	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 0

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		x1=	
FACW species	25	x2=	50
FAC species	60	x3=	180
FACU species	15	x4=	60
UPL species		x5=	0
Column Totals:	100 (A)		290 (B)

Prevalence Index = B/A= 2.90

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Sand	Large rocks and cobble throughout

[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 MLRLA 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:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 1.00
Water Table Present?	Yes	X	No	___	Depth (inches): 0.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0.0

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

Hydrology is attributed to recent heavy rains, roadway runoff and drainage from upslope wetland. No evidence to inundation on a regular and prolonged basis. Sample plot meets primary wetland hydrology indicators for surface water (A1), high water table (A2), and saturation (A3), and one secondary indicator for the FAC-neutral test.

Additional Reference Data: Photos

Photo Name: Photo_231110115552

Photo Name: Photo_231110115601

Photo Name: Photo_231110115543

Additional Reference Data: Photos

Photo Name: Photo_231110115613

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W17-P1 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland plot located slightly upslope and outside the influence of standing water located north of SR-14 and west of SW Rock Creek Drive. No hydric soils present, weakly dominant hydrophytic vegetation and an assumed false positive on hydrology due to recent heavy rainfall.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)			
1. Alnus rubra	20	Yes	FAC
2. Populus balsamifera	10	Yes	FAC
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Oemleria cerasiformis	10	Yes	FACU
2. Populus balsamifera	5	Yes	FAC
3. Rubus armeniacus	5	Yes	FAC
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Holcus lanatus	30	Yes	FAC
2. Equisetum arvense	20	Yes	FAC
3. Daucus carota	15	No	FACU
4. Poa annua	10	No	FAC
5. Schedonorus arundinaceus	10	No	FAC
6. Hypericum perforatum	2	No	FACU
7.			
8.			
9.			
10.			
11.			
	87	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 13

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	0
FAC species	110	x3=	330
FACU species	27	x4=	108
UPL species		x5=	0
Column Totals:	137 (A)		438 (B)

Prevalence Index = B/A= 3.20

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Sample plot meets the dominance test for hydrophytic vegetation. Many facultative species within plot, common at wetland boundaries. Presence of FACU species.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1						Silty Clay	
2-8	10YR 3/1	100					Silty Clay	
8-14	10YR 3/1	90					Silty Clay	
	10YR 5/2	10						
14-19	7.5 Y 3/1	90					Silty Clay	
	10YR 5/2	8	5 YR 5/8	2	C	M		
19-24	10YR 4/1	80	5YR 3/4	20	C	M	Silty Clay Loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRLA 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:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 X No ___ Depth (inches): 6.0

Saturation Present? Yes X No ___ Depth (inches): 2.0

(includes capillary fringe)

Wetland Hydrology Present? **Yes X No** ___

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

Remarks:

Sample plot meets primary hydrology indicators for high water table (A2) and saturation (A3). However, a false positive for hydrology is assumed due to recent heavy rains and saturated soils in the area.

Additional Reference Data: Photos

Photo Name: Photo_231110123733

Photo Name: Photo_231110123739

Photo Name: Photo_231110123748

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W17-P2 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 5

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Not mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Sample plot located at the headwaters and boundary of the wetland. This plot is located north of SR-14 and west of SW Rock Creek Drive. Wetland 17 formed in a roadside ditch, is partially culverted and discharges to Wetland 18 to the east. Sample plot meets indicators for hydrophytic vegetation, hydric soils and wetland hydrology.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Populus balsamifera	30	Yes	FAC
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Populus balsamifera	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Holcus lanatus	35	Yes	FAC
2. Phalaris arundinacea	30	Yes	FACW
3. Equisetum arvense	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 25

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		x1=	
FACW species	30	x2=	60
FAC species	85	x3=	255
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	115 (A)		315 (B)

Prevalence Index = B/A= 2.74

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Silt Loam	Organics present
2-9	10YR 3/1	100					Silt Loam	
9-14	2.5Y 6/2	70					Silty Clay Loam	
	10YR 3/1	30						
14-22	10YR 3/1	90	2.5YR 3/6	10	C	M	Silty Clay Loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X 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 MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- X 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 X No ___

Remarks:

Soils within sample plot meet hydric soil indicators for depleted below dark surface (A11) and depleted matrix (F3)

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 8.00
Water Table Present?	Yes	X	No	___	Depth (inches): 2.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Surface water between 2 and 8 inches deep was observed in the wetland (A1). Soils saturated to surface (A3) and high water table present (A2).

Additional Reference Data: Photos

Photo Name: Photo_231110125650

Photo Name: Photo_231110125026

Photo Name: Photo_231110125657

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W18-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 1

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland sample plot located adjacent to standing water to the north and SR-14 roadbed to the south. Flow is slow moving and discharges to Stream 12 and Rock Cove. Plot meets indicators for hydrophytic vegetation, hydric soils and wetland hydrology.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.	Fraxinus latifolia	20	Yes	FACW
2.	Spiraea douglasii	10	Yes	FACW
3.				
4.				
5.				
		30	= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Phalaris arundinacea	40	Yes	FACW
2.	Holcus lanatus	10	No	FAC
3.	Callitriche stagnalis	10	No	OBL
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		60	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 40

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	10	x1=	10
FACW species	70	x2=	140
FAC species	10	x3=	30
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	90 (A)		180 (B)

Prevalence Index = B/A= 2.00

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Bare ground includes surface water with no vegetation rooted and leaf litter. Vegetation was recently cut to the ground, minimal regrowth observed at the time of the survey. Sample meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Sandy Loam	
6-18	10YR 3/2	93	7.5 Y 5/6	7	C	M	Sandy 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 MLRLA 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:

Soils in sample plot meet indicator for redox dark surface (F6).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 6.00
Water Table Present?	Yes	X	No	___	Depth (inches): 5.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 3.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Surface water between 1 and 6 inches deep was observed within the wetland. Primary wetland hydrology indicators include surface water (A1), high water table (A2) and saturation (A3), and secondary indicator for the FAC-neutral test (D5).

Additional Reference Data: Photos

Photo Name: Photo_231110141118

Photo Name: Photo_231110142407

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W18-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): None | Slope(%): 15

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland plot located near toe slope of SR-14 roadbed. An abrupt transition to upland conditions occurs just outside the influence of standing water. Vegetation within sample plot meets dominance test for hydrophytic vegetation.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum	(Plot size: 30 feet)			
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.	Rubus armeniacus	5	Yes	FAC
2.				
3.				
4.				
5.				
		5	= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Poa spp.	55	Yes	FAC
2.	Daucus carota	40	Yes	FACU
3.	Hypochaeris radicata	10	No	FACU
4.	Cirsium arvense	3	No	FAC
5.	Lathyrus latifolius	3	No	FAC
6.	Phalaris arundinacea	2	No	FACW
7.				
8.				
9.				
10.				
11.				
		113	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 5

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: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species	2	x2=	4
FAC species	66	x3=	198
FACU species	50	x4=	200
UPL species		x5=	0
Column Totals:	118 (A)		402 (B)

Prevalence Index = B/A= 3.41

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried herbaceous layer. Unidentified Poa spp. within highway maintenance prism. Sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Sandy Loam	
2-24	10YR 3/2	100					Sandy 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 MLRLA 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:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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	X	No	___	Depth (inches): 23.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 20.0

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

Hydrology too deep to be an indicator of wetland conditions.

Additional Reference Data: Photos

Photo Name: Photo_231110144137

Photo Name: Photo_231110142902

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W18-P3 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 0

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland plot located slightly upslope of slow moving water and below tow of slope of museum fill yard. Rocky material noted at the plot may be relic from installation of fill yard to the north. Sample plot meets all three wetland indicators.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.	Fraxinus latifolia	40	Yes	FACW
2.	Rubus armeniacus	20	Yes	FAC
3.	Spiraea douglasii	5	No	FACW
4.				
5.				
		65	= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Phalaris arundinacea	25	Yes	FACW
2.	Galium aparine	5	No	FACU
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		30	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 70

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		x1=	
FACW species	70	x2=	140
FAC species	20	x3=	60
FACU species	5	x4=	20
UPL species		x5=	0
Column Totals:	95 (A)		220 (B)

Prevalence Index = B/A= 2.32

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Bare ground includes surface water with no vegetation rooted and leaf litter. Vegetation was recently cut to the ground, minimal regrowth observed at the time of the survey. Sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100						
8-18	10YR 3/2	92	7.5YR 4/6	8	C	M	Sandy 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 MLRLA 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:

Soils within sample plot meet hydric soil indicator for redox dark surface (F6).

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No ___	Depth (inches):	6.00
Water Table Present?	Yes	X	No ___	Depth (inches):	6.0
Saturation Present? (includes capillary fringe)	Yes	X	No ___	Depth (inches):	2.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Surface water within the wetland varies between 1 and 6 inches deep. Primary wetland hydrology indicators for surface water (A1), high water table (A2) and saturation (A3) are met as well as a secondary indicator for the FAC-neutral test (D5).

Additional Reference Data: Photos

Photo Name: Photo_231110145815

Photo Name: Photo_231110150110

Photo Name: Photo_231110150728

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W18-P4 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): None | Slope(%): 10

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland plot evaluated upslope from wetland signatures. Upland conditions occur quickly with rise in topography along fill slope. No wetland indicators are present.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)			
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	90	Yes	FAC
2. Alnus rubra	5	No	FAC
3.			
4.			
5.			
	95	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Galium aparine	40	Yes	FACU
2. Lathyrus latifolius	3	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	43	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 57

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		x1=	
FACW species		x2=	0
FAC species	98	x3=	294
FACU species	40	x4=	160
UPL species		x5=	0
Column Totals:	138 (A)		454 (B)

Prevalence Index = B/A= 3.29

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Dense blackberry briars contribute to lack of herbaceous vegetation. Sample plot does not meet indicators for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Sandy 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 MLRLA 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: 18

Depth (inches): Large rocks

Hydric Soil Present? Yes ___ No X

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

No primary or secondary indicators of wetland hydrology observed.

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/8/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W19-P1 (W)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil X or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Wetland 19 is situated in a depression north of Ashes Lake Road. A partially blocked culvert drains the wetland and a stream adjacent to the wetland to the east (Stream 6). The sample plot meets indicators for hydrophytic vegetation and wetland hydrology but lacks hydric soil indicators. Field observations and review of desktop resources indicate the partially blocked culvert may be contributing to the formation of the wetland but conditions have not been present long enough for hydric soils to exhibit wetland indicators. Soils were determined hydric using the procedure for problematic hydric soils outlined in the Regional Supplement.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)			
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species	100	x2=	200
FAC species		x3=	0
FACU species		x4=	0
UPL species		x5=	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A= 2.00

Hydrophytic Vegetation Indicators:

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Vegetation within the sample plot meets the rapid test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	100					Silt Loam	
20-24	10YR 3/2	99	10YR 3/4	1	C	M	Sandy 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 MLRLA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Soils lack hydric soil indicators. Using USACE guidance for problematic soils, hydric soils were confirmed by 1) presence of hydrophytic vegetation, 2) primary & secondary hydrology indicators met, 3) area likely to collect and retain water, 4) partially blocked culvert contributes to prolonged soil saturation. Aerial/ground-level images dating back ~20 years indicate the vegetation community is shifting from FAC to FACW; this may be a recently formed wetland. Additionally, organic matter from the seasonal die off stains the soil and masks redox features.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Tables (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches): 3.00
Water Table Present?	Yes	X	No	___	Depth (inches): 2.0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 0.0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Surface water observed in the wetland is attributed to impoundment of precipitation runoff and overbank flow from Stream 6 caused by a partially blocked culvert within the wetland. The presence of surface water and saturated soil conditions likely occurs during periods of heavy rainfall but inundation does not occur for prolonged periods because some water still passed through the culvert and because of the presence of relatively well-draining sandy loam soils. These two factors are believed to inhibiting the development of strong hydric soil indicators.

Additional Reference Data: Photos

Photo Name: Photo_231107162020

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: W19-P2 (U)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): None | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Verification plot taken to confirm upland condition outside the influence of Stream 6 and in a location where a distinct change in vegetative community begins. Vegetation surveyed in the plot meets the dominance test for hydrophytic vegetation. No wetland indicators for hydric soils or hydrology are met.

VEGETATION – Use scientific names of plants.

		Absolute	Dominant	Indicator
Tree Statum	(Plot size: 30 feet)	% Cover	Species?	Status
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.	Rubus armeniacus	10	Yes	FAC
2.				
3.				
4.				
5.				
		10	= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Cirsium vulgare	40	Yes	FACU
2.	Urtica dioica	25	Yes	FAC
3.	Galium aparine	15	No	FACU
4.	Phalaris arundinacea	5	No	FACW
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		85	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 5

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: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species	5	x2=	10
FAC species	35	x3=	105
FACU species	55	x4=	220
UPL species		x5=	0
Column Totals:	95 (A)		335 (B)

Prevalence Index = B/A= 3.53

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Sample plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Clay Loam	
18-24	10YR 3/2	25					Clay Loam	
	10YR 3/3	75						

[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 MLRLA 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:

No hydric soil indicators were met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 Date (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary or secondary indicators of wetland hydrology present.

Additional Reference Data: Photos

Photo Name: Photo_231109100408

Photo Name: Photo_231109100400

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/6/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: VP-1 (WA)

Investigators: B DARBY, JEN MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Verification plot taken to verify the upland conditions adjacent to Ditch 1. Plot is within the "No Dig" zone at Hamilton Island Recreation Area; no soils or subsurface hydrology were evaluated. Area determined to be upland using field observations, topography, aerial imagery and best professional judgement.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Agrostis scabra	50	Yes	FAC
2.	Cichorium intybus	35	Yes	FACU
3.	Hypochaeris radicata	20	No	FACU
4.	Vicia americana	10	No	FAC
5.	Daucus carota	5	No	FACU
6.				
7.				
8.				
9.				
10.				
11.				
		120	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 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		x1=	
FACW species		x2=	0
FAC species	60	x3=	180
FACU species	60	x4=	240
UPL species		x5=	0
Column Totals:	120 (A)		420 (B)

Prevalence Index = B/A= 3.50

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Multistoried herb layer. Upland vegetation persists throughout the plot.

SOIL

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

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

[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 MLRLA 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:

Soils were not evaluated in the "No Dig" zone and were assumed to be non-hydric based on vegetation communities, lack of surface hydrology and best professional judgement.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 Date (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed adjacent to Ditch 1. Flow within the ditch was roughly 6 inches deep at the time of survey.

Additional Reference Data: Photos

Photo Name: Photo_231106141622

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/6/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: VP-2 (WA)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 1

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Verification plot recorded adjacent to Ditch 3 to document upland conditions. Plot is within the "No Dig" area at Hamilton Island Recreation Area; no soils or subsurface hydrology were evaluated. Area determined to be upland using field observations, topography, aerial imagery and best professional judgement. The verification plot meets the dominance test for hydrophytic vegetation.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)				
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)				
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum (Plot size: 10 feet)				
1.	Agrostis scabra	65	Yes	FAC
2.	Cichorium intybus	15	No	FACU
3.	Rumex crispus	10	No	FAC
4.	Geranium molle	10	No	UPL
5.	Daucus carota	3	No	FACU
6.	Taraxacum officinale	3	No	FACU
7.				
8.				
9.				
10.				
11.				
		106	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)				
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	0
FAC species	75	x3=	225
FACU species	21	x4=	84
UPL species	10	x5=	50
Column Totals:	106 (A)		359 (B)

Prevalence Index = B/A= 3.39

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Multistoried herb layer. The verification plot met the dominance test for hydrophytic vegetation; soils and subsurface hydrology were not evaluated.

SOIL

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

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

[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 MLRLA 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:

Soils were not evaluated in the "No Dig" zone and were assumed to be non-hydric based on vegetation communities, lack of surface hydrology and best professional judgement.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

No hydrology indicators observed adjacent to Ditch 3. Flow within the ditch was roughly 2 inches deep at the time of survey.

Additional Reference Data: Photos

Photo Name: Photo_231106153125

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 4/20/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: VP-3 (WA)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Depression | Local Relief (concave, convex, none): Concave | Slope(%): 0

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Precipitation analysis showed drier than normal conditions in the three months prior to the delineation. Verification plot established in topographic roadside depression approximately 30 feet wide and 1000 feet long. Culvert present but no flow signatures observed. No change in vegetation in depressional area to the northeast. This area was determined to be upland.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Pseudotsuga menziesii	60	Yes	FACU
2. Acer macrophyllum	15	No	FACU
3. Alnus rubra	10	No	FAC
4.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	35	Yes	FAC
2. Oemleria cerasiformis	15	Yes	FACU
3. Symphoricarpos albus	10	No	FACU
4.			
5.			
	60	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
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: 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		x1=	
FACW species		x2=	0
FAC species	45	x3=	135
FACU species	100	x4=	400
UPL species		x5=	0
Column Totals:	145 (A)		535 (B)

Prevalence Index = B/A= 3.69

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Multistoried vegetation canopy. Bare ground comprised of soil, rocks and forest debris; no herbs or forbs observed at verification plot. Some mosses present at forest floor.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	2.5Y 3/2	100					Clay Loam	
10-24	2.5Y 4/2	100					Sandy 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 MLRLA 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:

Soils at verification plot do not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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? Yes ___ No X Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

No primary or secondary indicators of wetland hydrology present.

Additional Reference Data: Photos

Photo Name: Photo_230420120649

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/7/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: VP-4 (WA)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Toeslope | Local Relief (concave, convex, none): Concave | Slope(%): 2

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever sandy clay loam, 30 to 65 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Verification plot established to verify upland condition in a roadside ditch west of Stream 2. Hydrophytic vegetation present but no wetland soil or hydrology indicators present.

VEGETATION – Use scientific names of plants.

		Absolute	Dominant	Indicator
Tree Statum	(Plot size: 30 feet)	% Cover	Species?	Status
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Equisetum arvense	40	Yes	FAC
2.	Phalaris arundinacea	20	Yes	FACW
3.	Galium aparine	10	No	FACU
4.	Rubus laciniatus	5	No	FACU
5.	Schedonorus arundinaceus	3	No	FAC
6.	Cirsium arvense	2	No	FAC
7.				
8.				
9.				
10.				
11.				
		80	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 20

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		x1=	
FACW species	20	x2=	40
FAC species	45	x3=	135
FACU species	15	x4=	60
UPL species		x5=	0
Column Totals:	80 (A)		235 (B)

Prevalence Index = B/A= 2.94

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

Bare ground is associated with patchy vegetation and roadway shoulder. Verification plot meets the dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5 YR 2.5/2	98	7.5 YR 3/1	1	C	M	Sand	
			7.5 YR 3/4	1	C	M		
4-24	7.5 YR 3/2	98	7.5 YR 3/4	1	C	M	Sandy Loam	
			7.5YR 3/1	1	C	M		

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRLA 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:

No hydric soil indicators are met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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? Yes ___ No X Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes ___ **No X**

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

Remarks:

No defined bed and bank in roadside ditch. No hydrology indicators are met.

Additional Reference Data: Photos

Photo Name: Photo_231107124524

Photo Name: Photo_231107124457

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/9/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: VP-5 (WA)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Hillslope | Local Relief (concave, convex, none): Concave | Slope(%): 3

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Steever stony clay loam, 2 to 30 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Verification point established to determine upland conditions within a suspect depressional area north of Ash Lake Road. A depressional area occurs north of verification. Wetland hydrology was met with two secondary indicators.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum (Plot size: 30 feet)			
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Symphoricarpos albus	5	Yes	FACU
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	80	Yes	FAC
2. Urtica dioica	5	No	FAC
3. Phalaris arundinacea	5	No	FACW
4. Polystichum munitum	3	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	93	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 7

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		x1=	
FACW species	5	x2=	10
FAC species	85	x3=	255
FACU species	8	x4=	32
UPL species		x5=	0
Column Totals:	98 (A)		297 (B)

Prevalence Index = B/A= 3.03

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Verification plot does not meet criteria for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/2	100					Sandy Loam	Rock and cobble present

[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 MLRLA 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: Rocks

Depth (inches): 18

Hydric Soil Present? Yes ___ No X

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes X** **No** ___

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

Remarks:

Verification plot evaluated in depressional area near culvert where water is likely to pool during higher flows. No evidence of recent flow observed, drainage patters very faint.

Additional Reference Data: Photos

Photo Name: Photo_231109120944

Photo Name: Photo_231109120957

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 4/21/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: VP-6 (WA)

Investigators: BRYAN DARBY, JEN MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Flat | Local Relief (concave, convex, none): None | Slope(%): 1

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If No, explain in Remarks)

Are Vegetation: ___ Soil ___ or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation: ___ Soil ___ or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ___		
Hydric Soil Present?	Yes ___	No X	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes ___	No X	**within a Wetland?**	Yes ___ No X

Remarks:

Conditions drier than normal. Verification plot evaluated within proposed landing site. The area was comprised of fill material and mainly devoid of vegetation. Fill consists primarily of rocky gravel, and a restrictive layer at approximately 12 inches. The majority of vegetation growing within this area are upland weedy species. Vegetation within verification plot meets dominance test for hydrophytic vegetation. No hydric soils or wetland hydrology indicators present.

VEGETATION – Use scientific names of plants.

		Absolute % Cover	Dominant Species?	Indicator Status
Tree Statum	(Plot size: 30 feet)			
1.				
2.				
3.				
4.				
			= Total Cover	
Sapling/Shrub Stratum	(Plot size: 10 feet)			
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
Herb Stratum	(Plot size: 10 feet)			
1.	Poa spp.	15	Yes	FAC
2.	Geranium molle	15	Yes	UPL
3.	Lolium perenne	10	Yes	FAC
4.	Trifolium repens	9	No	FAC
5.	Daucus carota	5	No	FACU
6.	Holcus lanatus	3	No	FAC
7.	Rumex crispus	3	No	FAC
8.	Matricaria discoidea	3	No	FACU
9.	Plantago lanceolata	3	No	FACU
10.	Melilotus officinalis	1	No	FACU
11.				
		67	= Total Cover	
Woody Vine Stratum	(Plot size: 10 feet)			
1.				
2.				
			= Total Cover	

% Bare Ground in Herb Stratum 33

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: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	0
FAC species	40	x3=	120
FACU species	12	x4=	48
UPL species	15	x5=	75
Column Totals:	67 (A)		243 (B)

Prevalence Index = B/A= 3.63

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

Vegetation within verification plot meets dominance test for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	99	7.5YR 5/8	1	C	M	Sandy 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 MLRLA 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: Large rocks, gravel

Depth (inches): 12

Hydric Soil Present? Yes ___ No X

Remarks:

Restrictive layer at 12 inches. No indicators of hydric soil in excavated soils.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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 Date (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary or secondary indicators of wetland hydrology present.

Additional Reference Data: Photos

Photo Name: Photo_230421121230

Photo Name: Photo_230421121236

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

Project/Site: Cascade Renewables | City/County: Skamania | Sampling Date: 11/10/2023

Applicant/Owner: Cascade Renewables | State: WA | Sampling Point: VP-7 (WA)

Investigators: B DARBY, J MAZE | Section, Township, Range: [redacted]

Landform (hillslope, terrace, etc.): Flat | Local Relief (concave, convex, none): None | Slope(%): 0

Subregion (LRR): A - Northwest Forest and | Lat: [redacted] | Long: [redacted] | Datum: WGS84

Soil Map Unit Name: Arents, 0 to 5 percent slopes | NWI Classification: Unmapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If No, explain in Remarks)

Are Vegetation: ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation: ____ Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Verification plot evaluated within proposed landing site on a dry terrace above the Columbia River. Restrictive hardpan layer, encountered at 6 inches below ground surface, non-hydric soils are assumed. No wetland indicators are met.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator
Tree Statum (Plot size: 30 feet)	% Cover	Species?	Status
1. Pseudotsuga menziesii	40	Yes	FACU
2. Populus balsamifera	10	No	FAC
3. Acer macrophyllum	10	No	FACU
4.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	15	Yes	FAC
2. Quercus garryana	5	Yes	FACU
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Poa pratensis	40	Yes	FAC
2. Daucus carota	30	Yes	FACU
3. Vicia americana	25	No	FAC
4. Plantago lanceolata	25	No	FACU
5. Hypochaeris radicata	20	No	FACU
6. Cichorium intybus	5	No	FACU
7.			
8.			
9.			
10.			
11.			
	145	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1=	
FACW species		x2=	0
FAC species	90	x3=	270
FACU species	135	x4=	540
UPL species		x5=	0
Column Totals:	225 (A)		810 (B)

Prevalence Index = B/A= 3.60

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 data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Vegetation within sample plot does not meet criteria for hydrophytic vegetation.

SOIL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	100						Gravel, restrictive at 6 inches

[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 MLRLA 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: Hardpan

Depth (inches): 6

Hydric Soil Present? Yes ___ No X

Remarks:

Shovel refusal at 6 inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Tables (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 Aeriel Imagery (B
- ___ Sparsley Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MRLA 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) (**MRLA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aeriel 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? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

No primary or secondary indicators of wetland hydrology present.

Additional Reference Data: Photos

Photo Name: Photo_231110155453

Photo Name: Photo_231110155449

Photo Name: Photo_231110155459

Appendix C. Wetland Rating Forms

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Wetland name or number: W1

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W1 **Date of site visit:** 11/06/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category I**] (based on functions [ ] or special characteristics [X])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[ ] **Category II** - Total score = 20 - 22

[X] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**L**	
Landscape Potential	**L**	**L**	**H**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**6**	**6**	**7**	**19**

Score for each function based on three ratings
(order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	**Category I**
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	

Wetland name or number: W1

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W1

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 2**
	Total for D 1:	**9**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W1

D 2.5 What are the other sources of pollutants coming into the wetland?	
Total for D 2:	**0**

Rating of Landscape Potential [ ] **3-4 = H** [ ] **1-2 = M** [X] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
Total for D 3:		**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 3**

Wetland name or number: W1

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**8**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**0**

Rating of Landscape Potential [ ] **3 = H** [ ] **1-2 = M** [X] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W1

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 1**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W1

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 2**

H 1.5 What are the special habitat features in the wetland?

- [ ] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 1**

Total for H 1: **6**

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W1

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [ ] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [x] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [x] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W1

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Category I Wetland of High Conservation Value

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result:

Wetland name or number: W1

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W1

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W1

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Category I**

Figure 1: Cowardin classes.

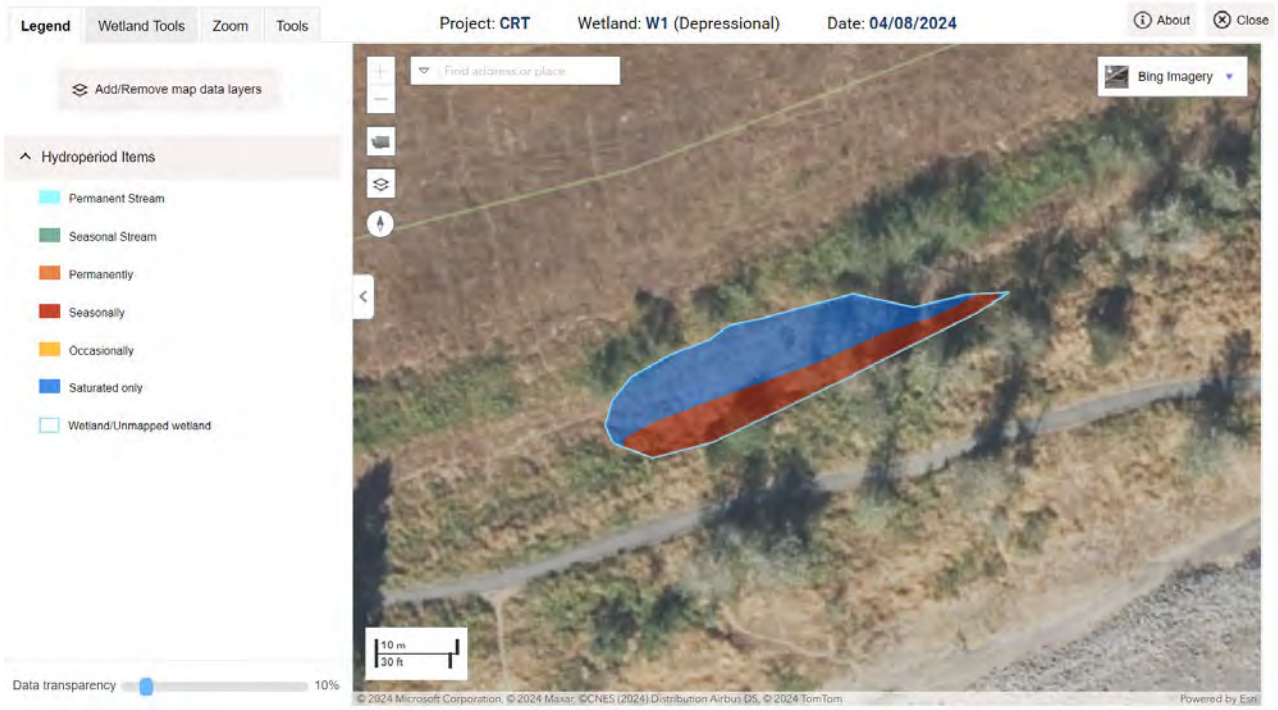

Figure 2: Hydroperiods

Figure 3: Outlet

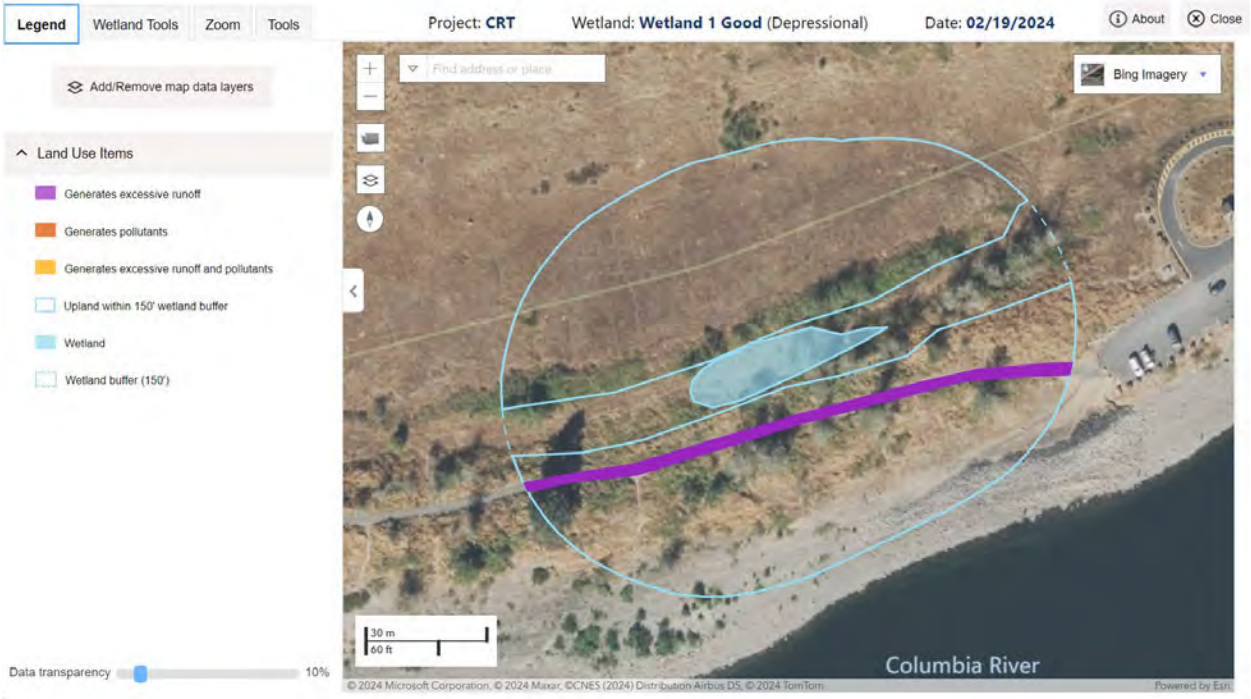

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

Figure 6: 1km polygon.

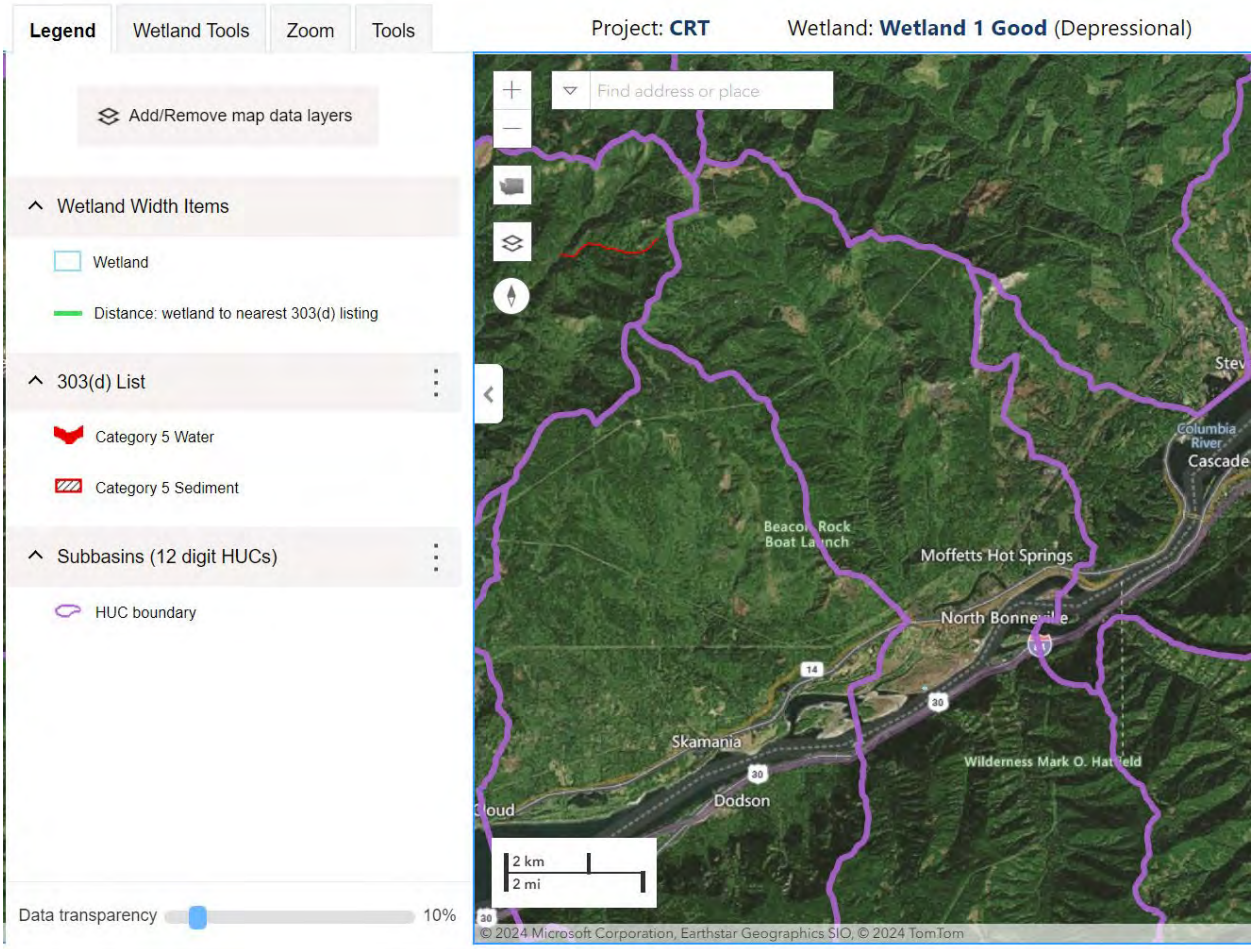

Figure 7: 303(d) listed waters in basin.

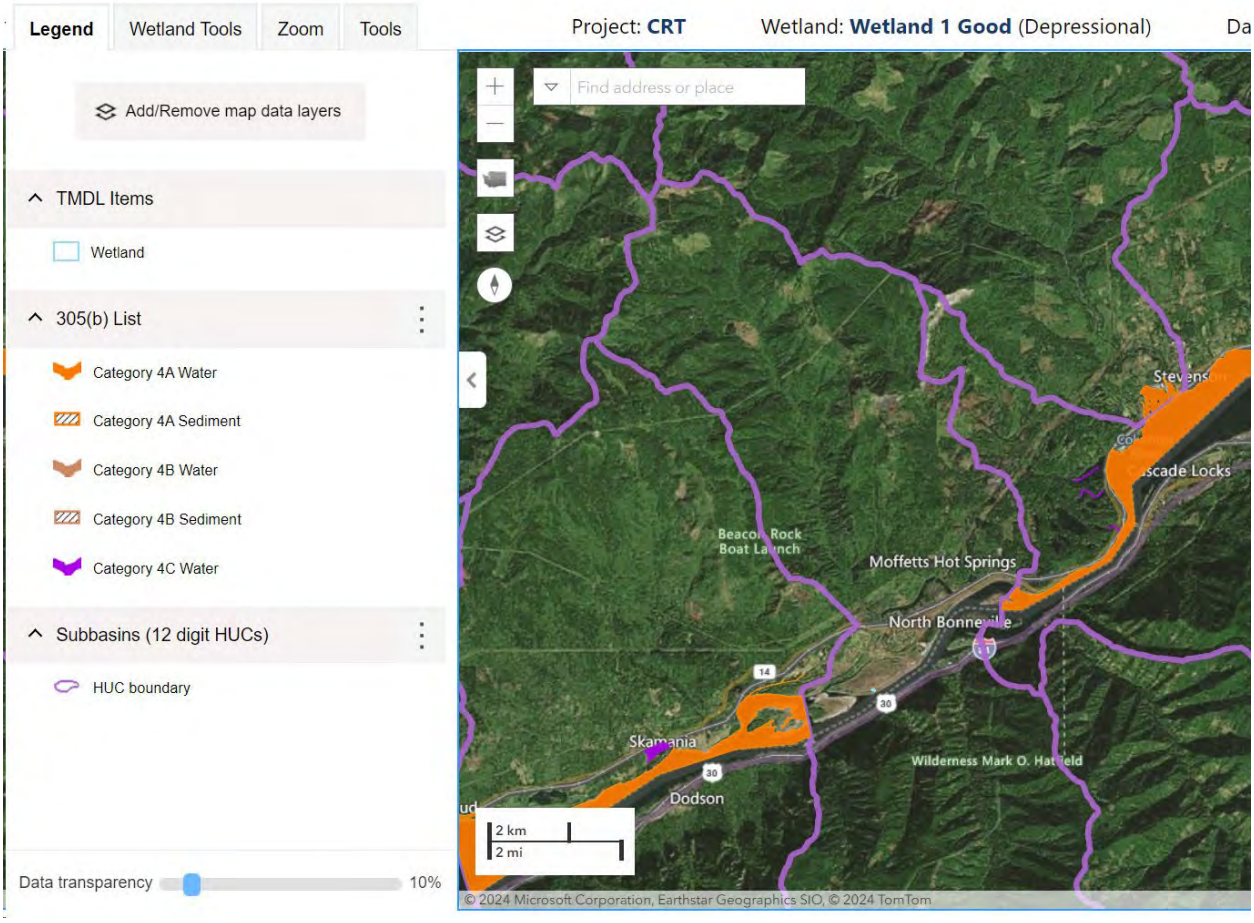

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W2

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W2 **Date of site visit:** 11/06/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category I**] (based on functions [ ] or special characteristics [X])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**L**	
Landscape Potential	**M**	**M**	**H**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**7**	**7**	**7**	**21**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	**Category I**
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	

Wetland name or number: W2

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W2

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 2**
	Total for D 1:	**9**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W2

D 2.5 What are the other sources of pollutants coming into the wetland?	
Total for D 2:	**1**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 3**

Wetland name or number: W2

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**8**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**1**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W2

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [ ] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 0**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W2

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 1**

H 1.5 What are the special habitat features in the wetland?

- [ ] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [ ] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score:**

Total for H 1: **3**

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W2

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [ ] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [ ] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [x] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W2

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal
☐ The wetland is vegetated
☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.
☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland
☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Category I Wetland of High Conservation Value

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result:

Wetland name or number: W2

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W2

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W2

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Category I**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

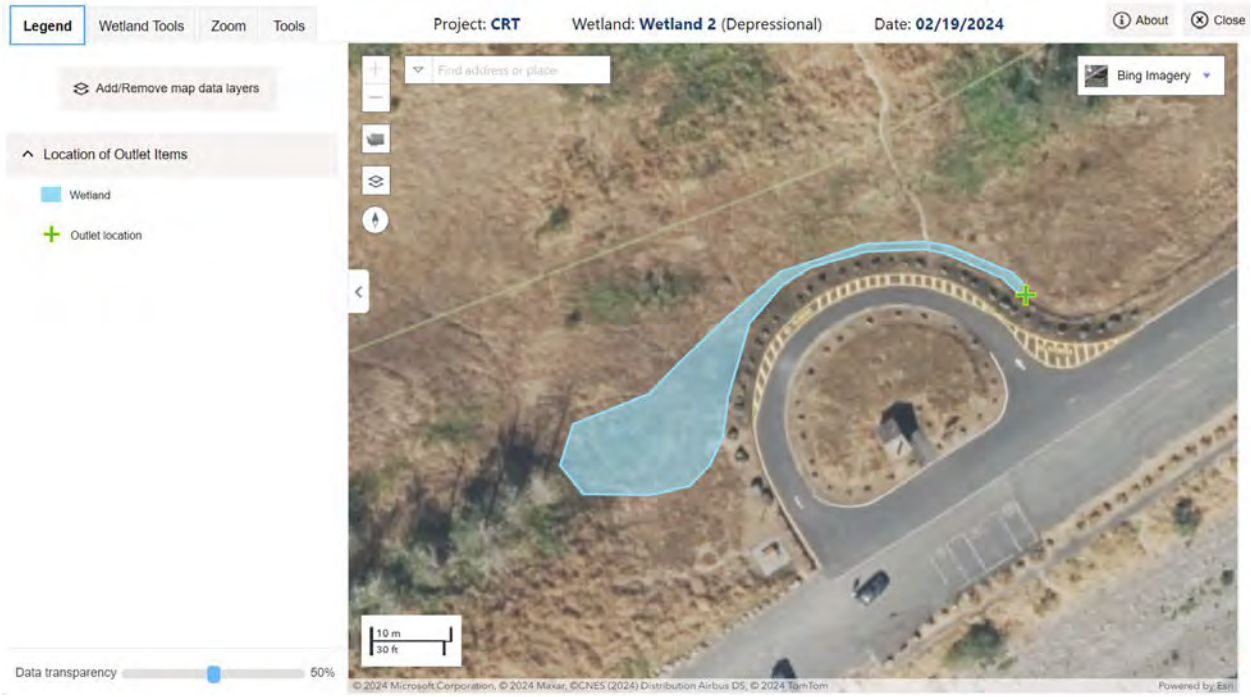

Figure 3: Outlet

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

Figure 6: 1km polygon.

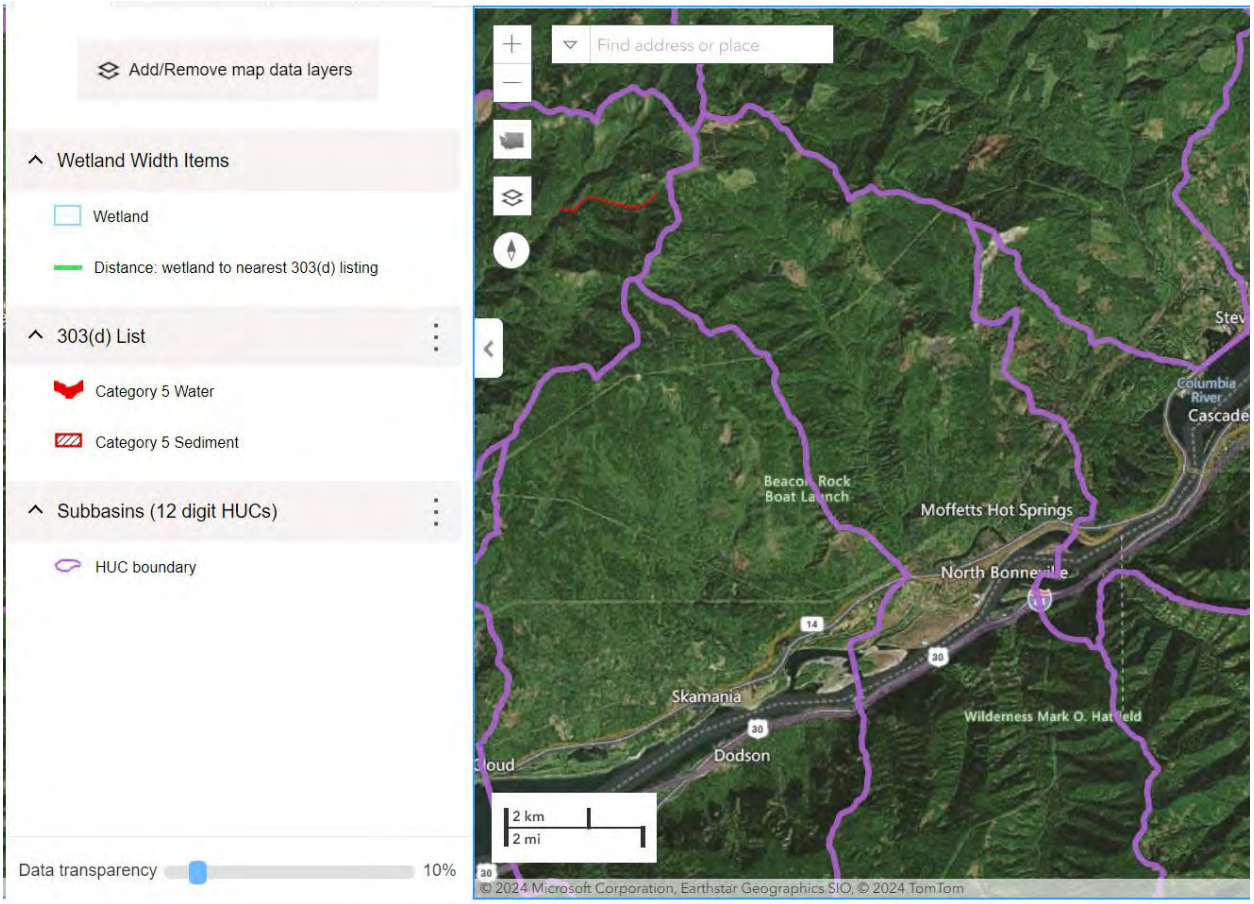

Figure 7: 303(d) listed waters in basin.

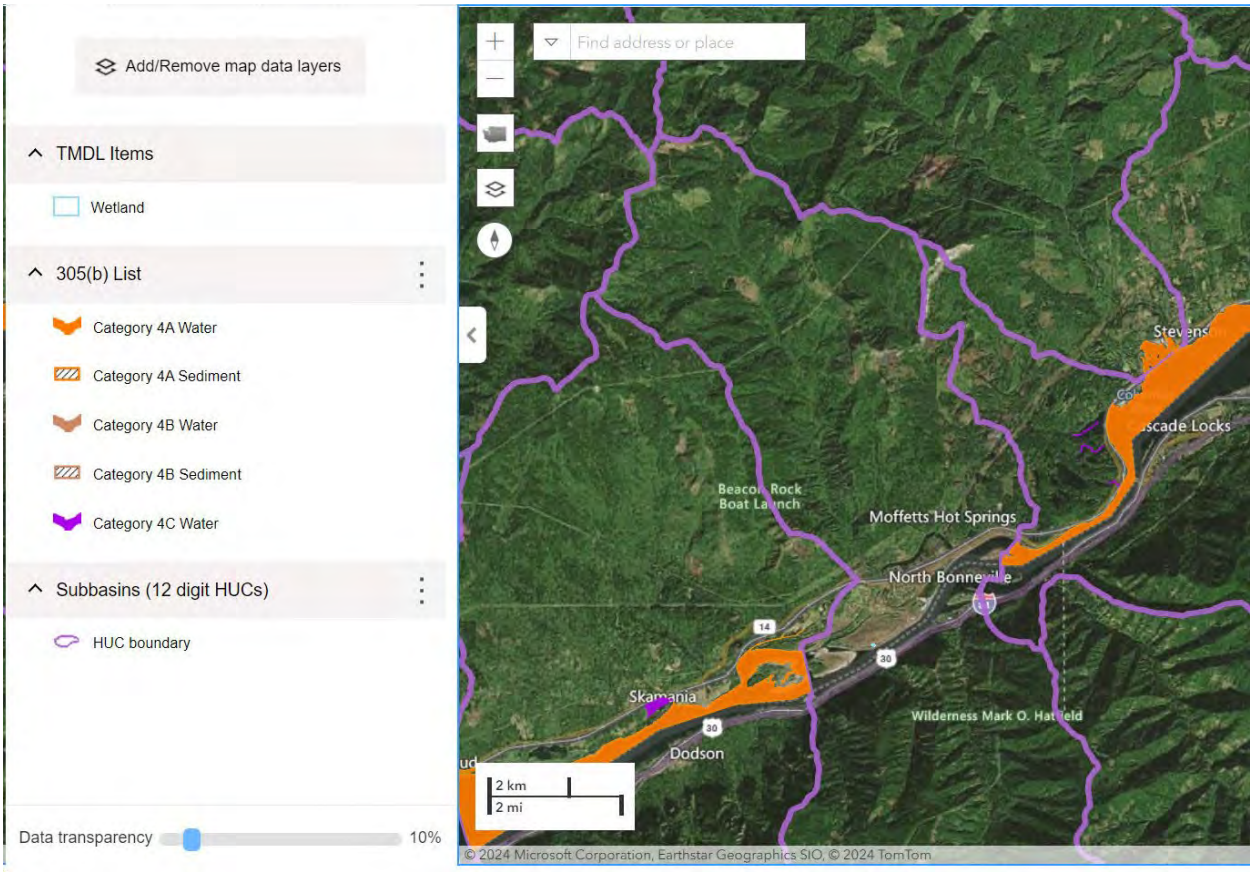

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W3

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W3 **Date of site visit:** 11/06/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category I**] (based on functions [ ] or special characteristics [X])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**L**	
Landscape Potential	**M**	**L**	**H**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**7**	**6**	**7**	**20**

Score for each function based on three ratings
(order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	**Category I**
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	

Wetland name or number: W3

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W3

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 2**
	Total for D 1:	**9**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 1**

Wetland name or number: W3

D 2.5 What are the other sources of pollutants coming into the wetland?		
Gravel Road		
	Total for D 2:	**1**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 3**

Wetland name or number: W3

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**8**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**0**

Rating of Landscape Potential [ ] **3 = H** [ ] **1-2 = M** [X] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W3

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [ ] Emergent
- [x] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 1**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W3

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 1**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 2**

Total for H 1: 6

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W3

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [ ] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [x] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [x] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W3

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal
☐ The wetland is vegetated
☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.
☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland
☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Category I Wetland of High Conservation Value

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result:

Wetland name or number: W3

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W3

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W3

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Category I**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Outlet

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

Figure 6: 1km polygon.

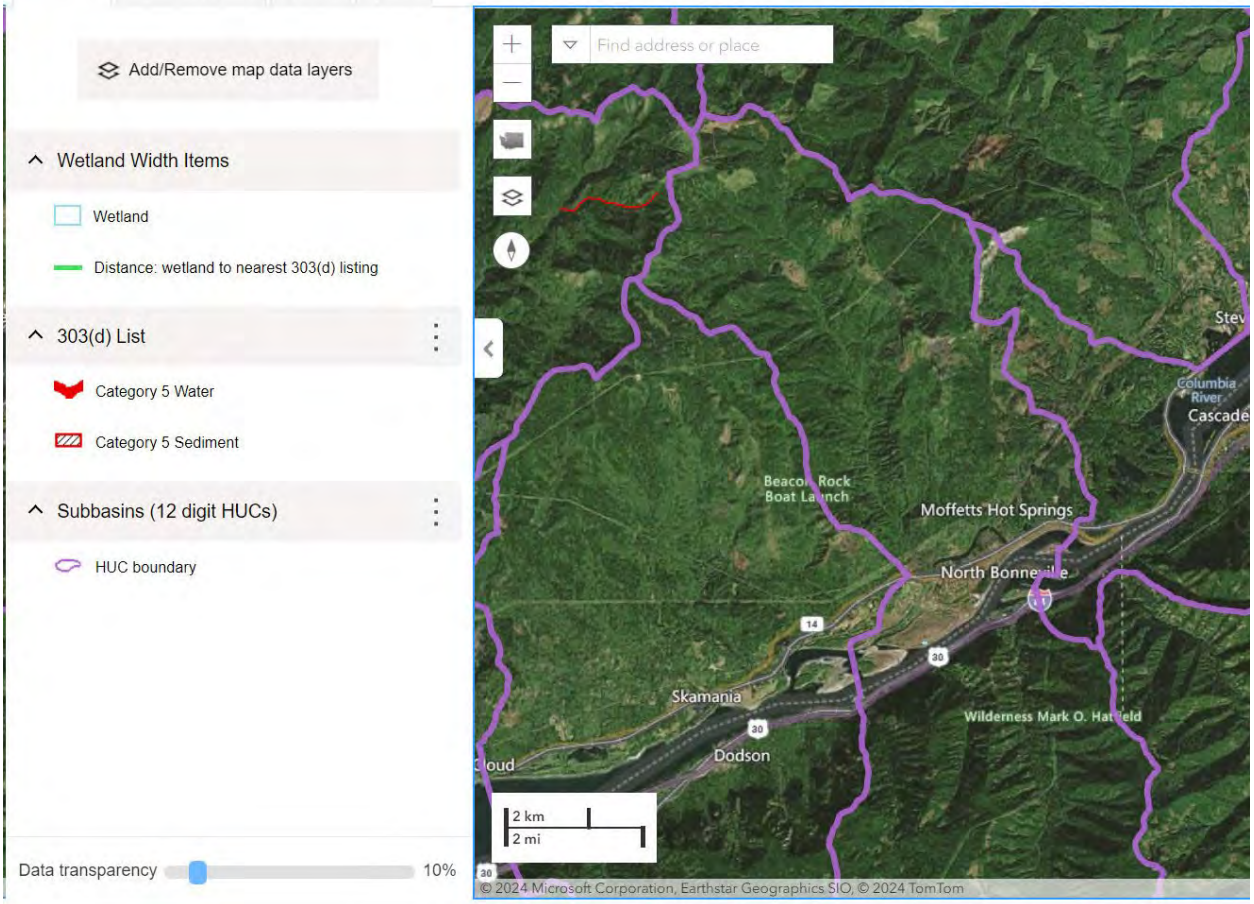

Figure 7: 303(d) listed waters in basin.

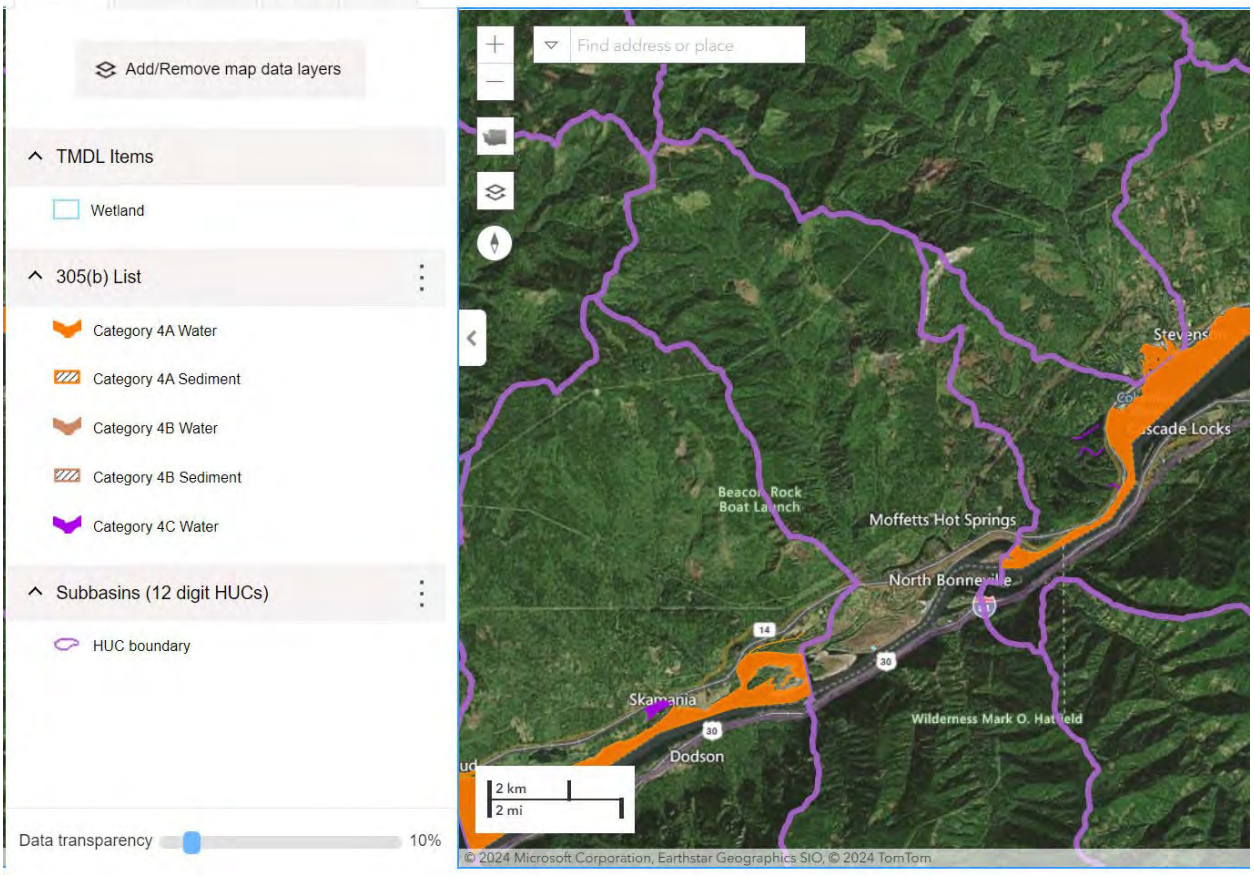

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W4

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W4 **Date of site visit:** 11/06/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [X] **No** [ ]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category I**] (based on functions [ ] or special characteristics [X])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**L**	
Landscape Potential	**M**	**M**	**H**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**7**	**7**	**7**	**21**

Score for each function based on three ratings
(order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	**Category I**
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	

Wetland name or number: W4

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W4

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 4**
	Total for D 1:	**11**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W4

D 2.5 What are the other sources of pollutants coming into the wetland?	
Total for D 2:	**1**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?

D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?

D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 3**

Wetland name or number: W4

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**8**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**1**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W4

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [ ] Emergent
- [x] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 1**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W4

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 1**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 2**

Total for H 1: 6

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W4

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [ ] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [✓] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [✓] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W4

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal
☐ The wetland is vegetated
☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.
☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland
☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Category I Wetland of High Conservation Value

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result:

Wetland name or number: W4

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W4

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W4

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Category I**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Outlet

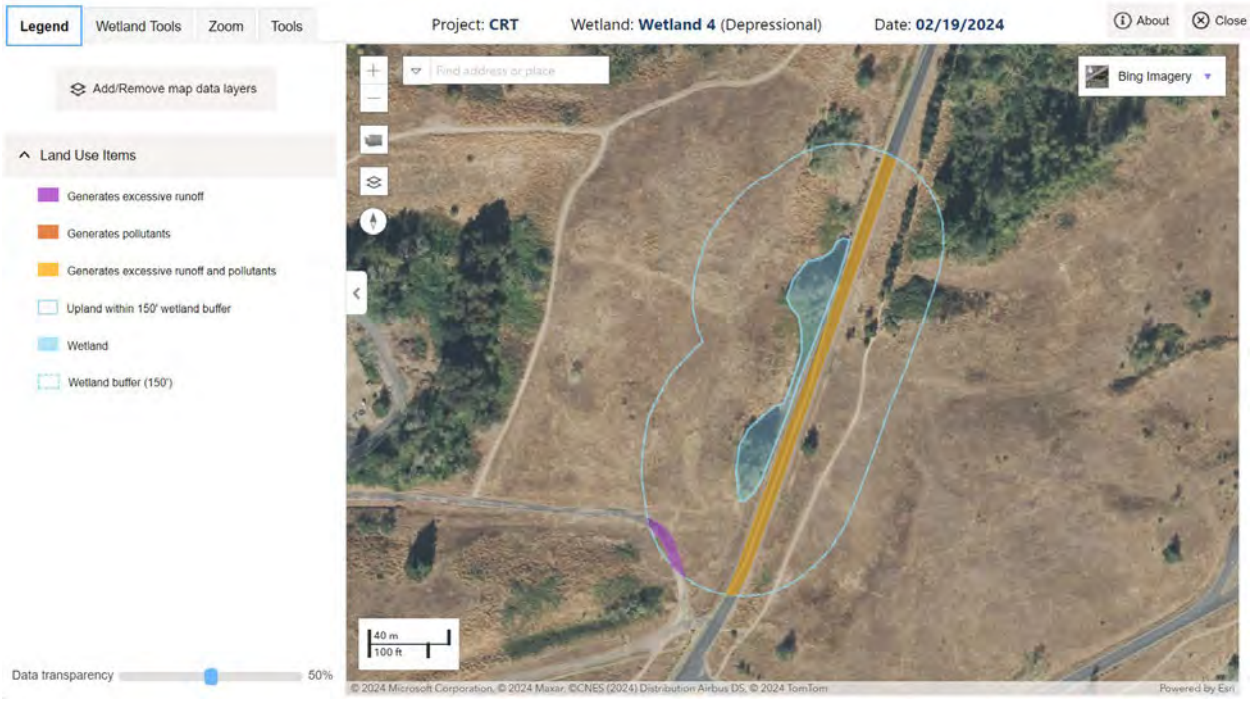

Figure 4: Boundary of 150’

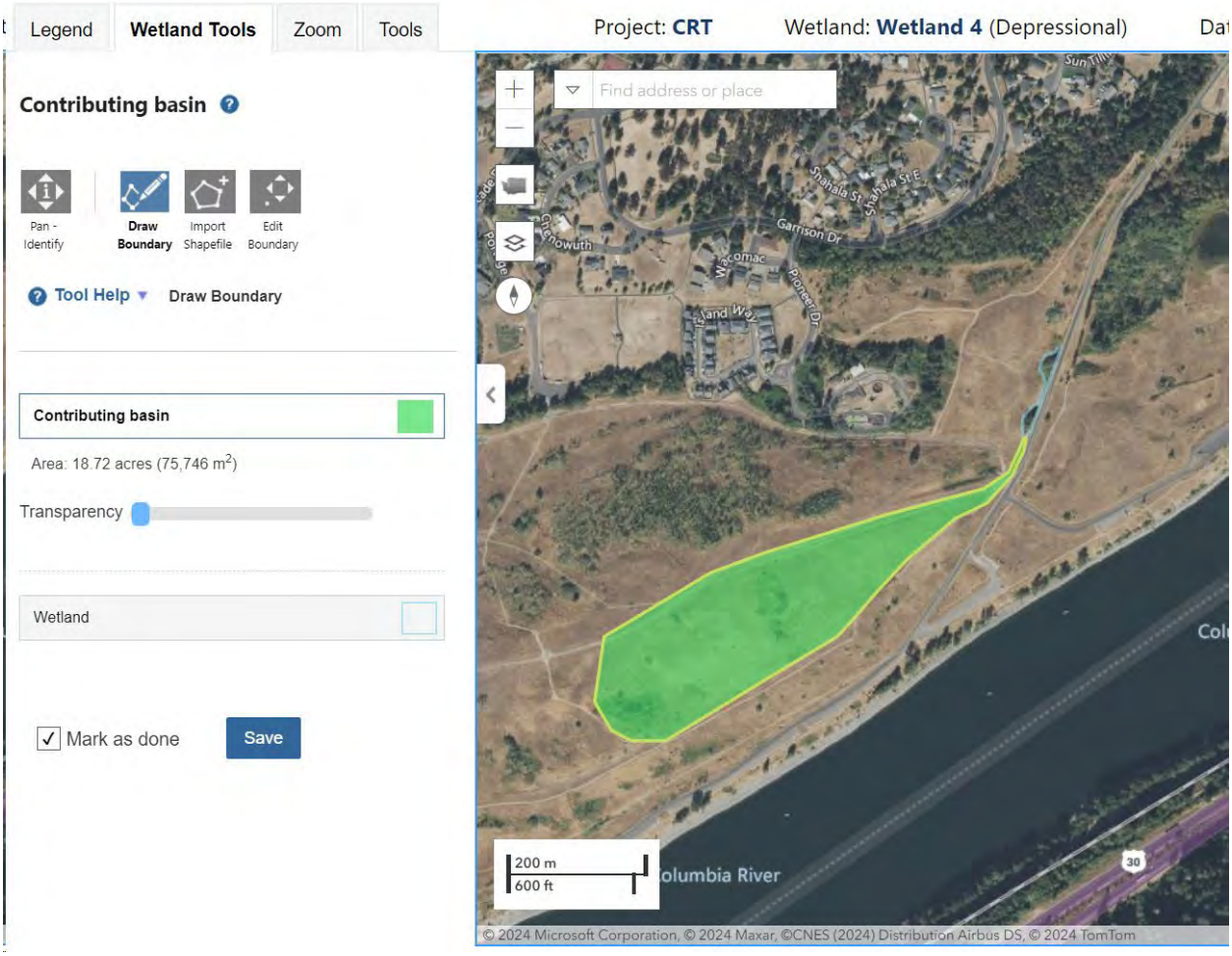

Figure 5: Contributing Basin

Figure 6: 1km polygon.

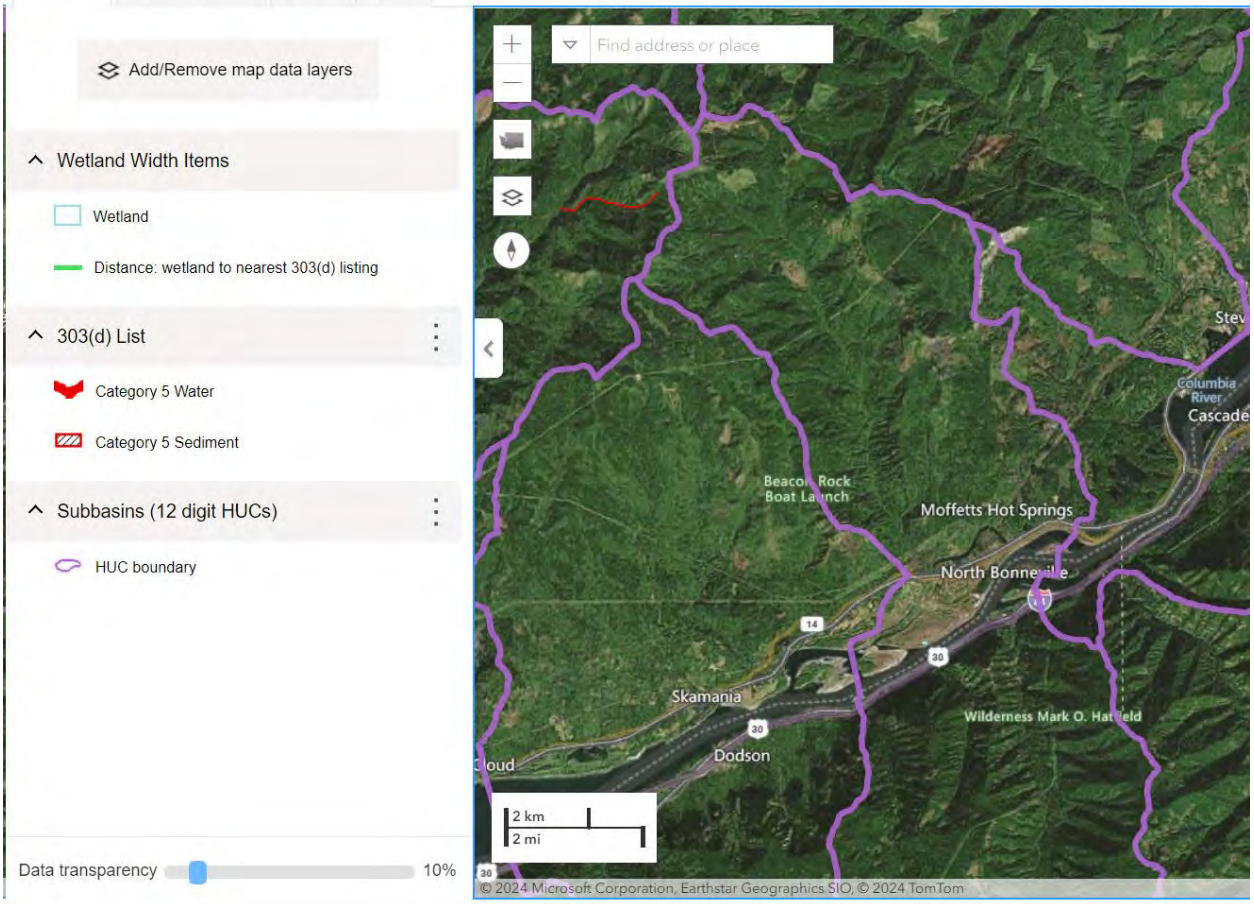

Figure 7: 303(d) listed waters in basin.

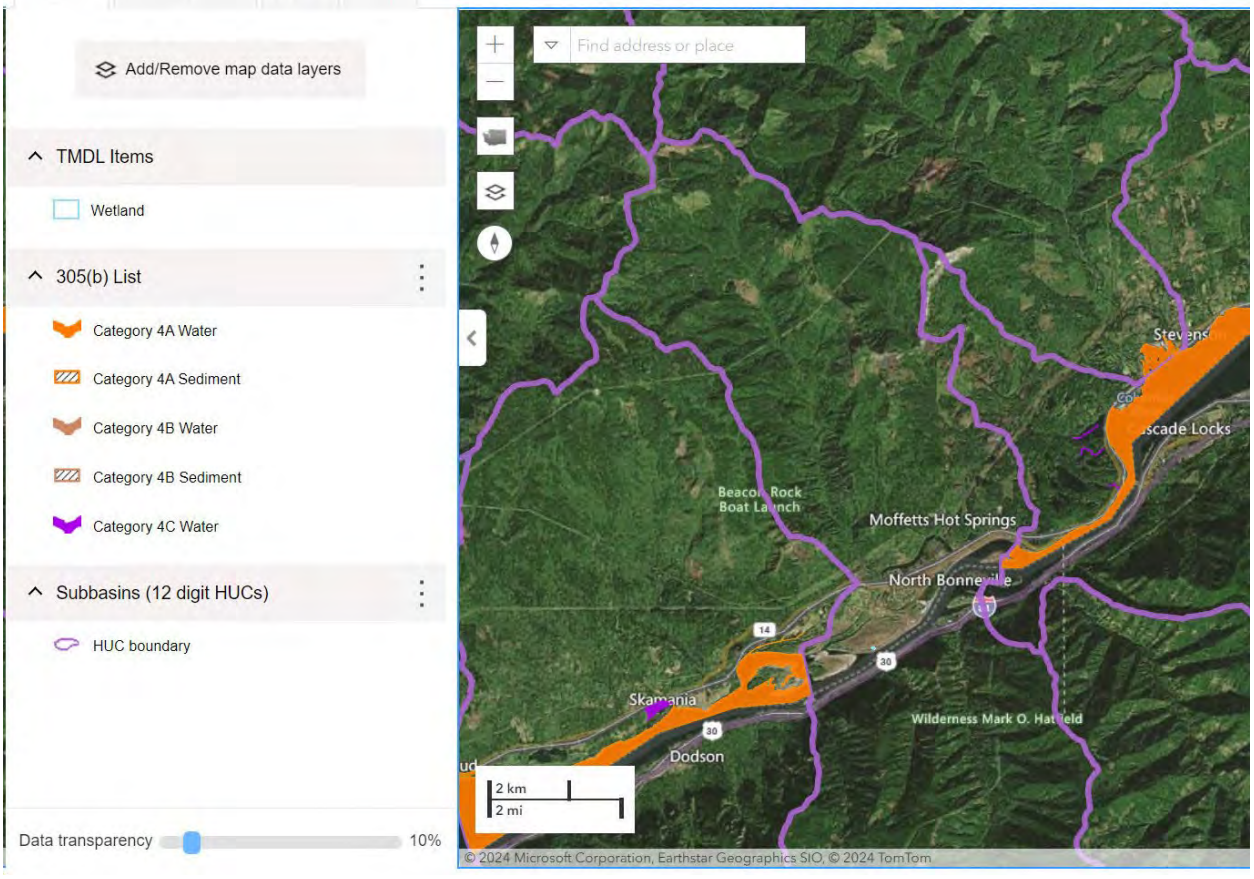

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W5

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W5 **Date of site visit:** 11/06/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category II**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**H**	**M**	
Landscape Potential	**M**	**M**	**M**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**7**	**8**	**7**	**22**

Score for each function based on three ratings
(order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W5

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W5

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 3**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 3**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 0**
	Total for D 1:	**6**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W5

D 2.5 What are the other sources of pollutants coming into the wetland?	
Total for D 2:	**2**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 4**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 7**

Wetland name or number: W5

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**14**

Rating of Site Potential [X] **12-16 = H** [ ] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**2**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W5

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [x] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 2**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [x] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 2**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W5

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 3**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 2**

Total for H 1: 10

Rating of Site Potential [ ] **15-18 = H** [X] **7-14 = M** [ ] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 0**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W5

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**3**

Rating of Landscape Potential [ ] **4-6 = H** [X] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [ ] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [✓] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [✓] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W5

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W5

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3
No - Not a Bog Wetland **Result:**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

- [ ] Old-growth forests
- [ ] Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W5

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W5

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Outlet

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

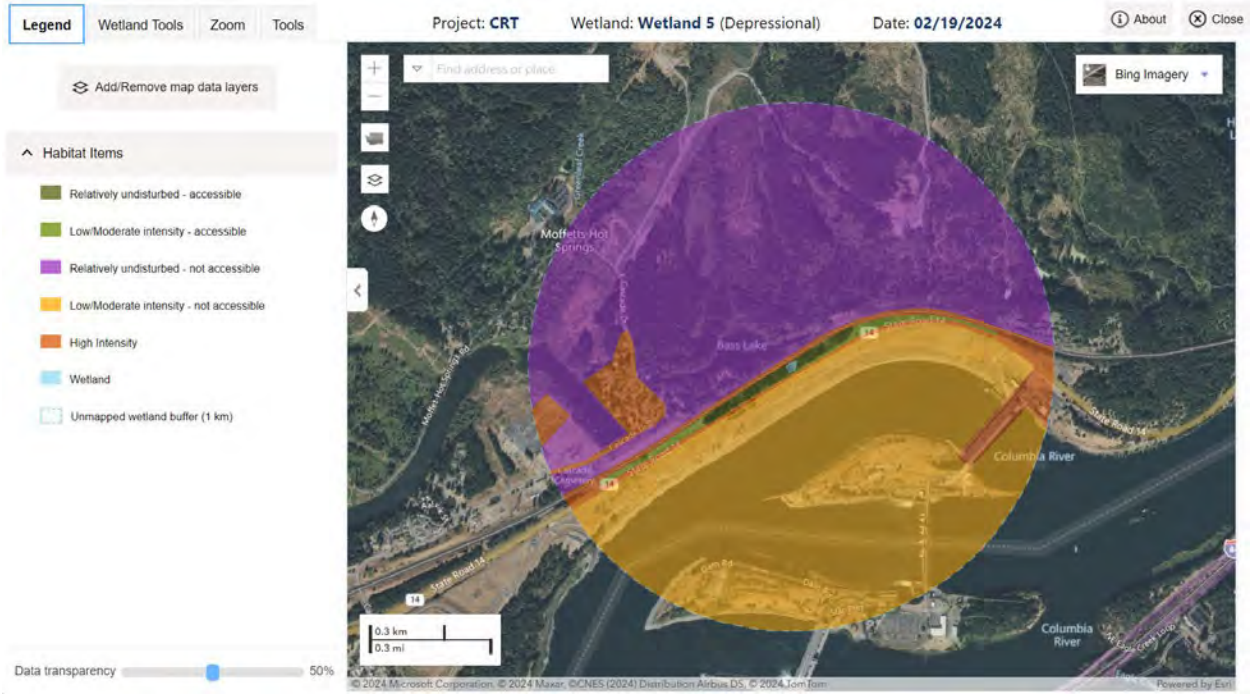

Figure 6: 1km polygon.

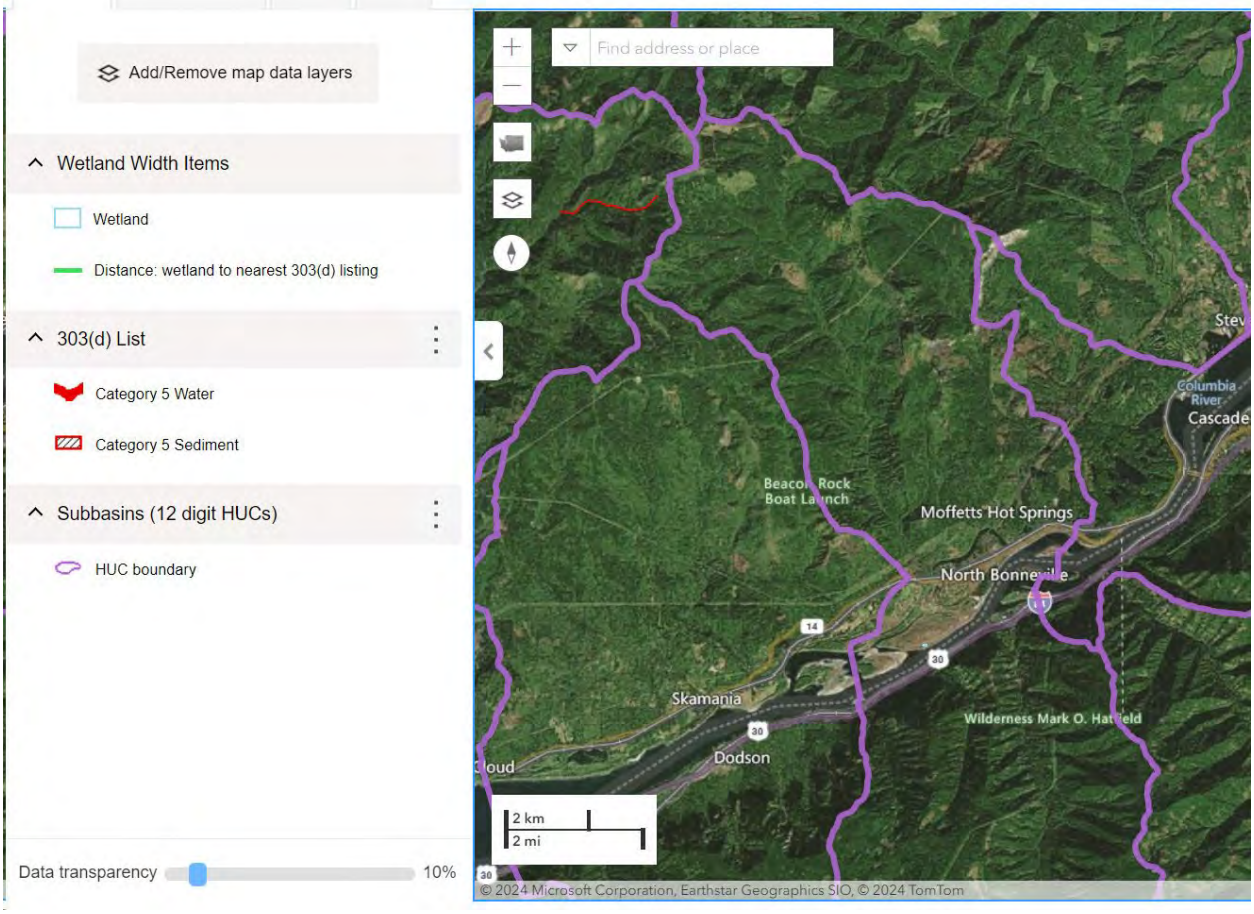

Figure 7: 303(d) listed waters in basin.

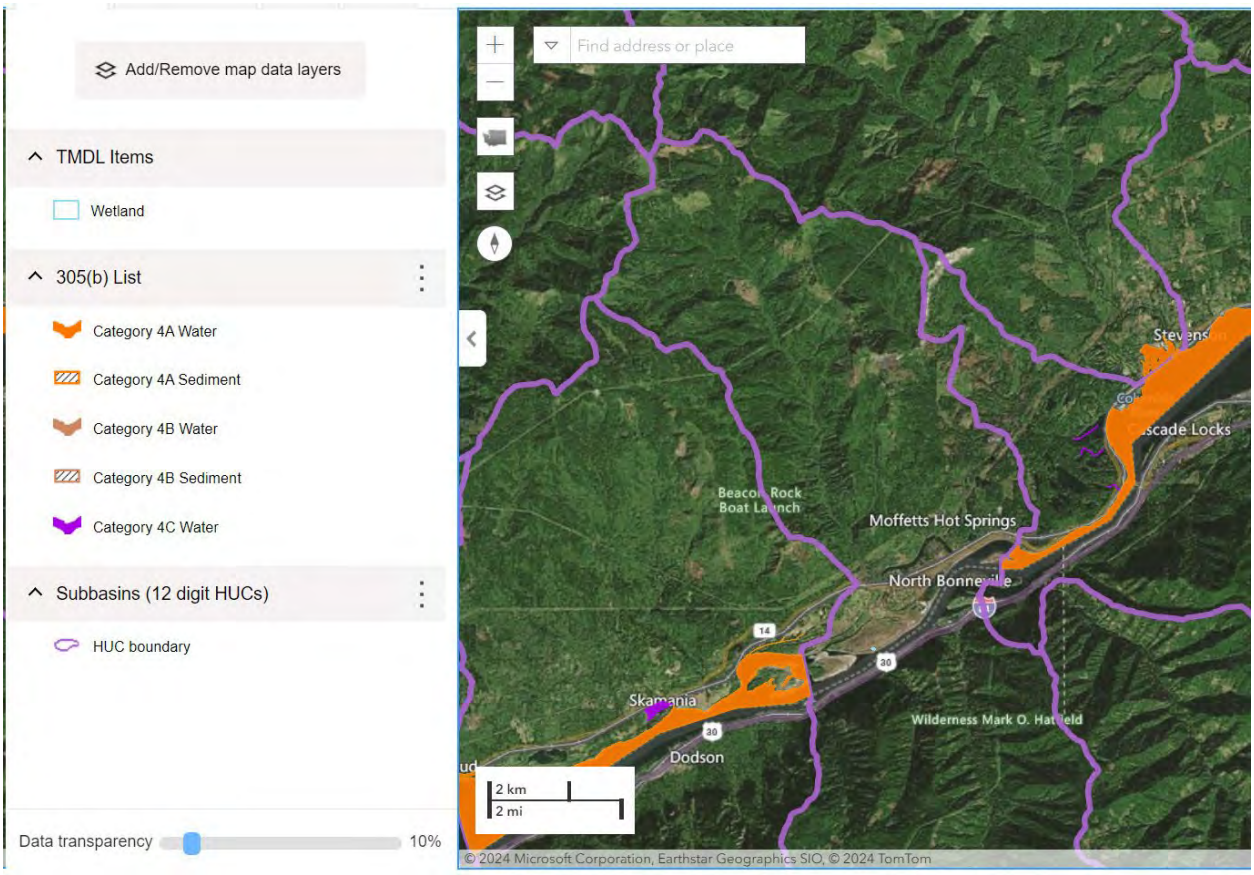

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W6

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W6 **Date of site visit:** 11/06/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category II**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**L**	**M**	**M**	
Landscape Potential	**M**	**M**	**M**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**6**	**7**	**7**	**20**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W6

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W6

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 1**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 0**
	Total for D 1:	**3**

Rating of Site Potential [ ] **12-16 = H** [ ] **6-11 = M** [X] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W6

D 2.5 What are the other sources of pollutants coming into the wetland?	
Total for D 2:	**2**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
Total for D 3:		**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 7**

Wetland name or number: W6

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 0**
	Total for D 4:	**9**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**2**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W6

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [x] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [ ] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 1**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [x] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 2**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W6

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 2**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 2**

Total for H 1: 8

Rating of Site Potential [ ] **15-18 = H** [X] **7-14 = M** [ ] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 0**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W6

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**3**

Rating of Landscape Potential [ ] **4-6 = H** [X] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [✓] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [✓] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [✓] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W6

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W6

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W6

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W6

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

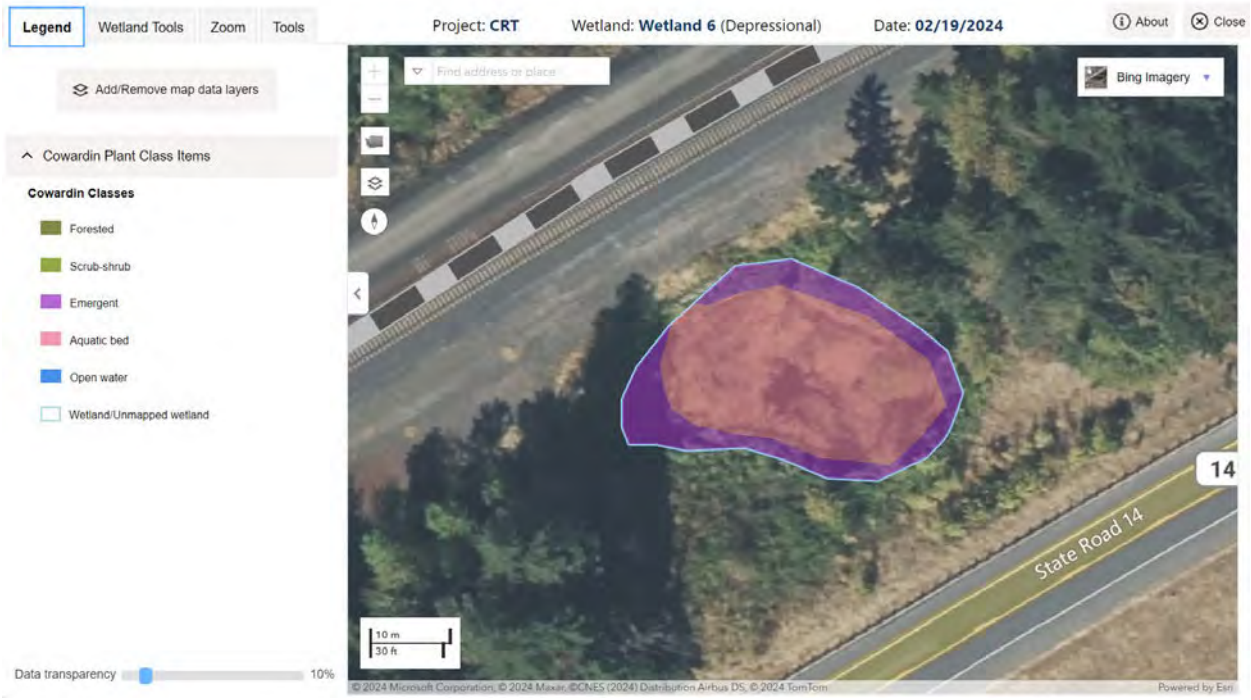

Figure 1: Cowardin classes.

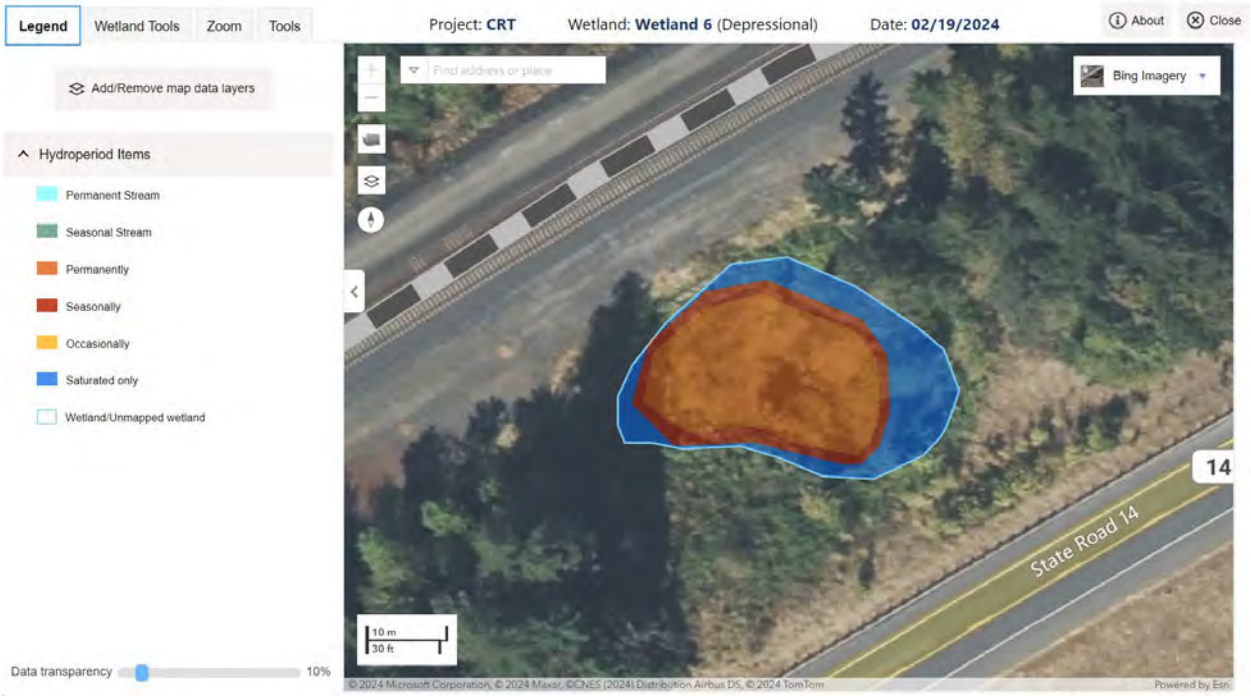

Figure 2: Hydroperiods

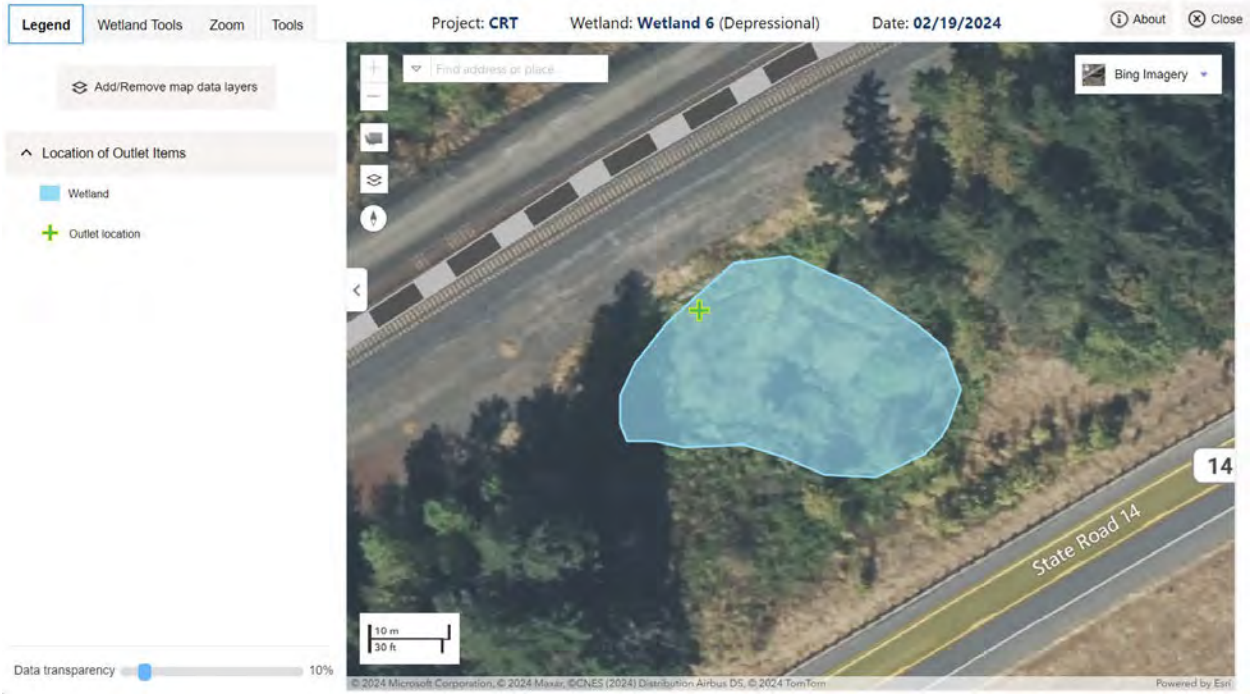

Figure 3: Outlet

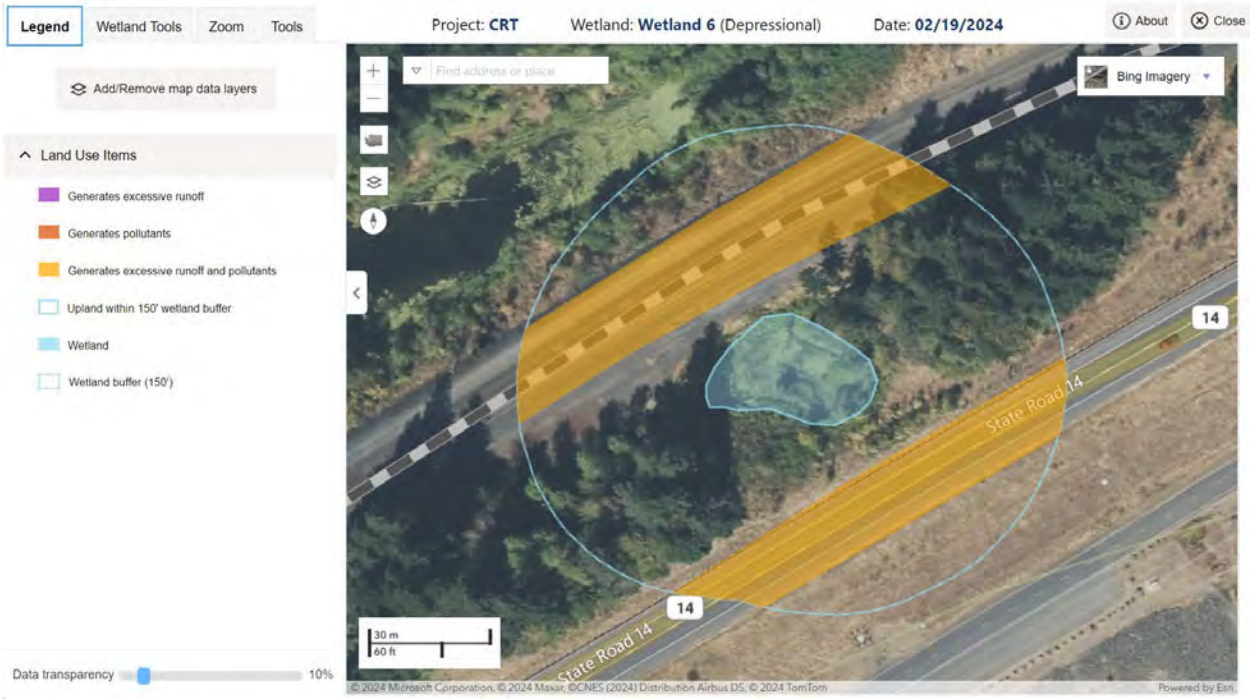

Figure 4: Boundary of 150’

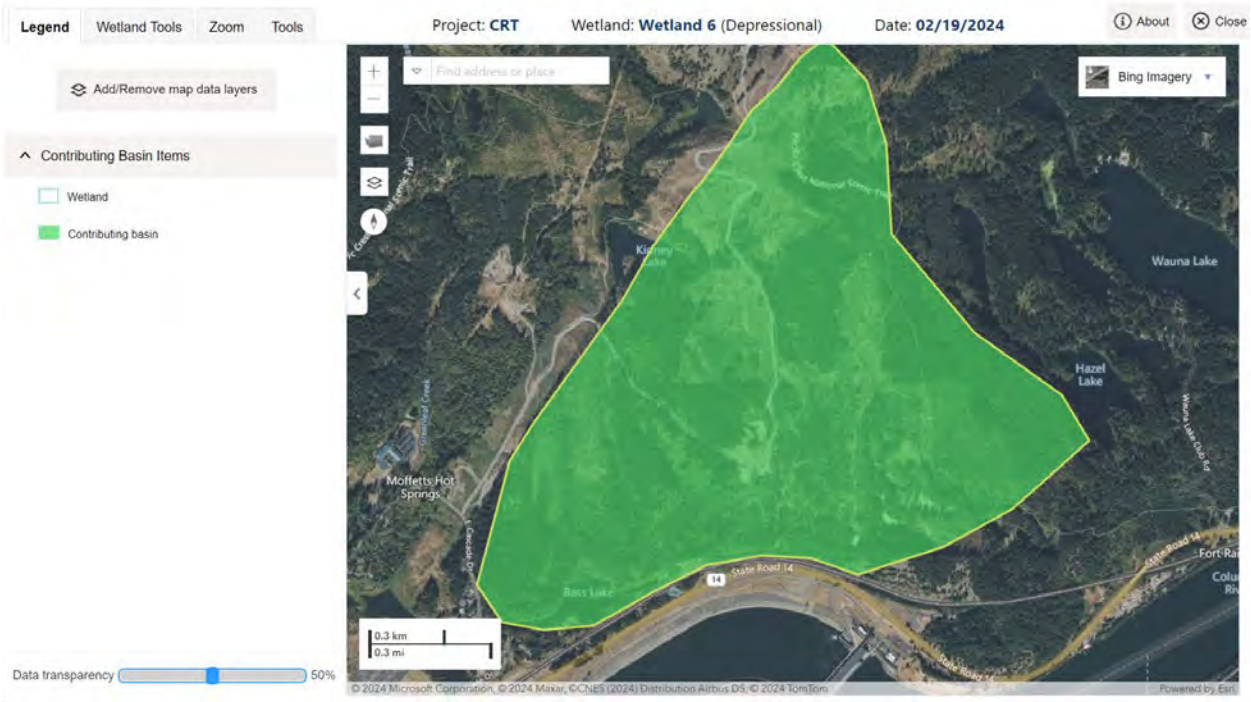

Figure 5: Contributing Basin

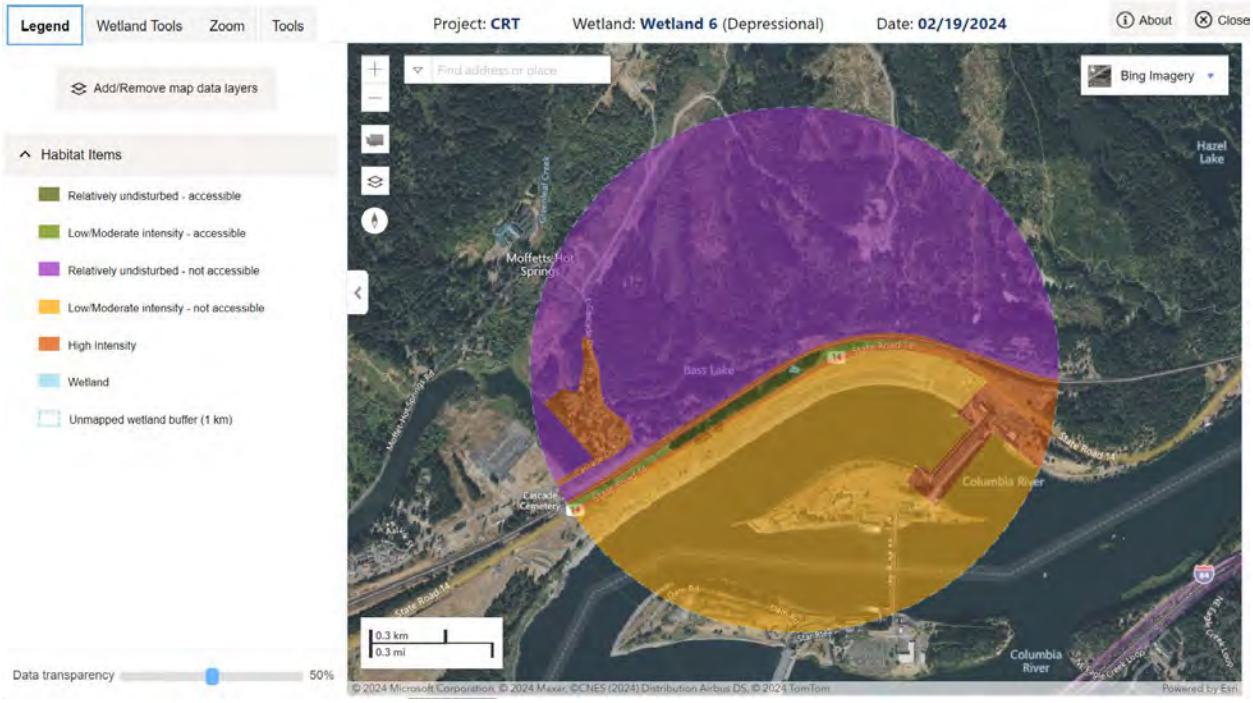

Figure 6: 1km polygon.

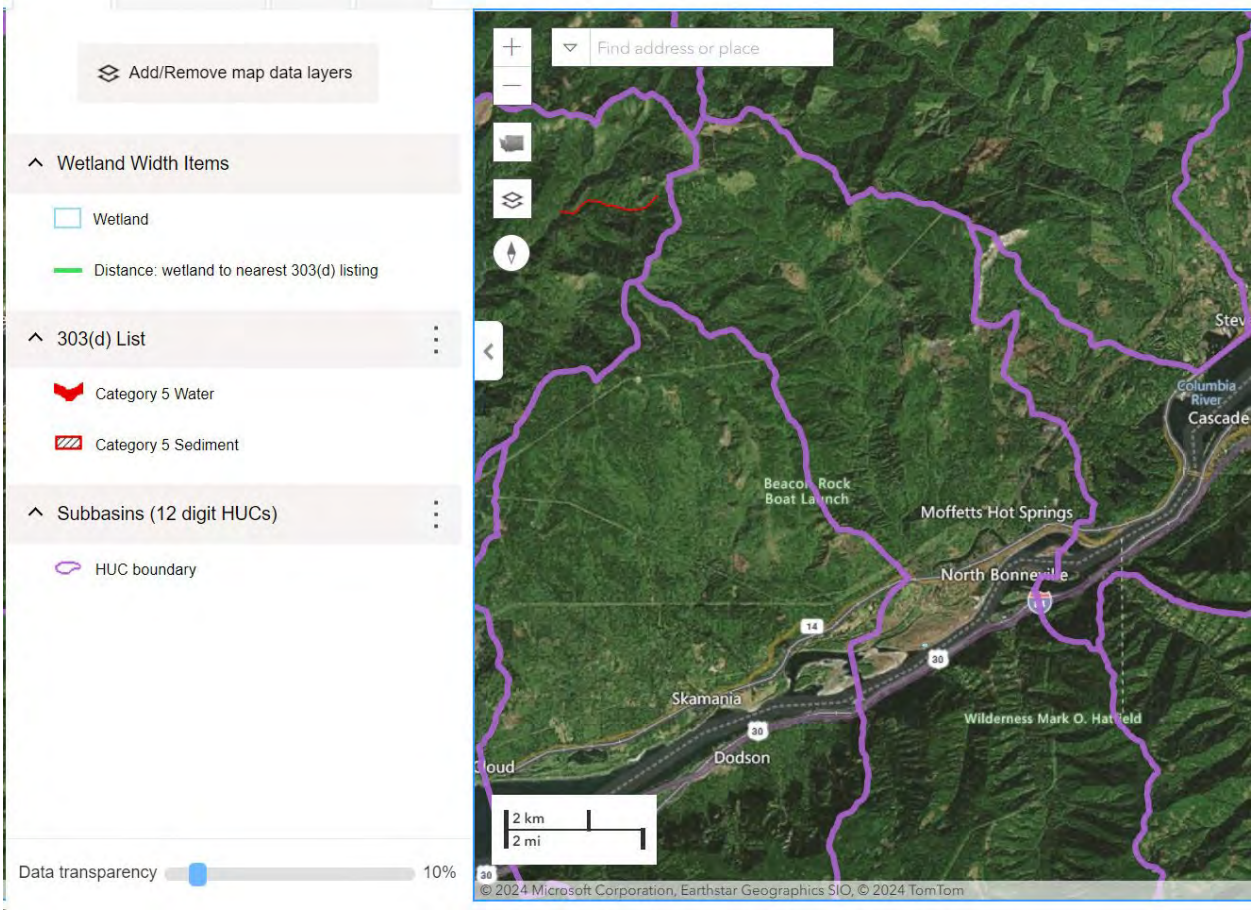

Figure 7: 303(d) listed waters in basin.

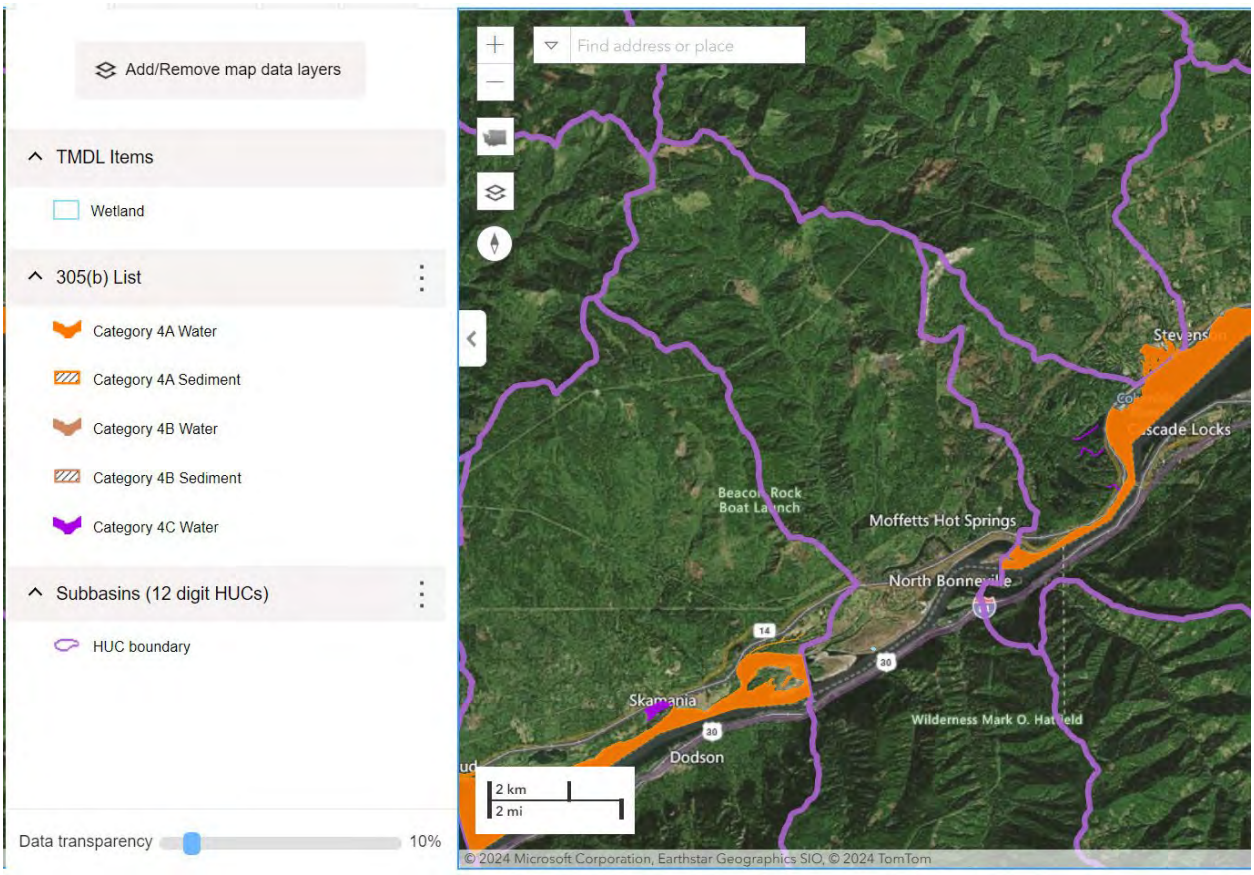

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W7

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W7 **Date of site visit:** 11/06/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category III**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[ ] **Category II** - Total score = 20 - 22

[X] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**L**	**L**	
Landscape Potential	**M**	**M**	**M**	
Value	**H**	**H**	**M**	**Total**
Score Based on Ratings	**7**	**6**	**5**	**18**

Score for each function based on three ratings
(order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W7

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W7

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 3**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 0**
	Total for D 1:	**8**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W7

D 2.5 What are the other sources of pollutants coming into the wetland?	
Total for D 2:	**2**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 4**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 0**

Wetland name or number: W7

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 0**
	Total for D 4:	**4**

Rating of Site Potential [ ] **12-16 = H** [ ] **6-11 = M** [X] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**2**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W7

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [ ] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 0**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 0**

Wetland name or number: W7

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 1**

H 1.5 What are the special habitat features in the wetland?

- [ ] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [ ] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score:**

Total for H 1: **2**

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 0**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W7

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**3**

Rating of Landscape Potential [ ] **4-6 = H** [X] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [ ] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 1**
	Total for H 3:	**1**

Rating of Value [ ] **2 = H** [X] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W7

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W7

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W7

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W7

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Outlet

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

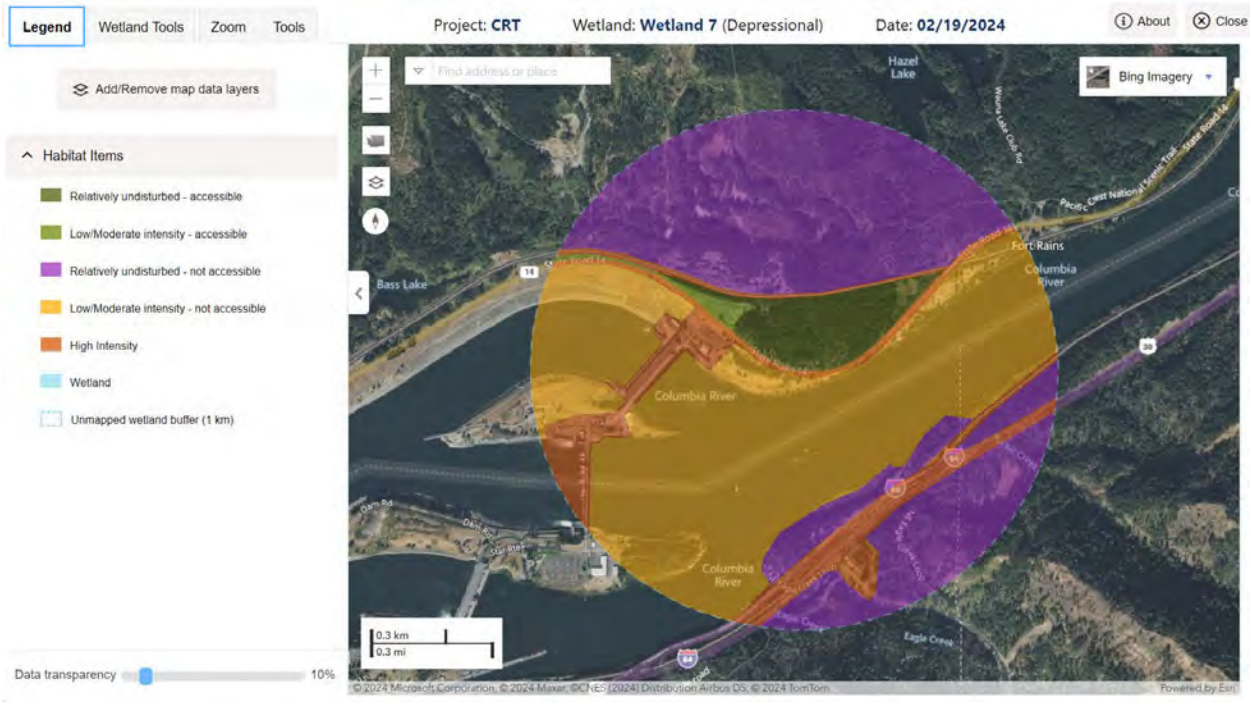

Figure 6: 1km polygon.

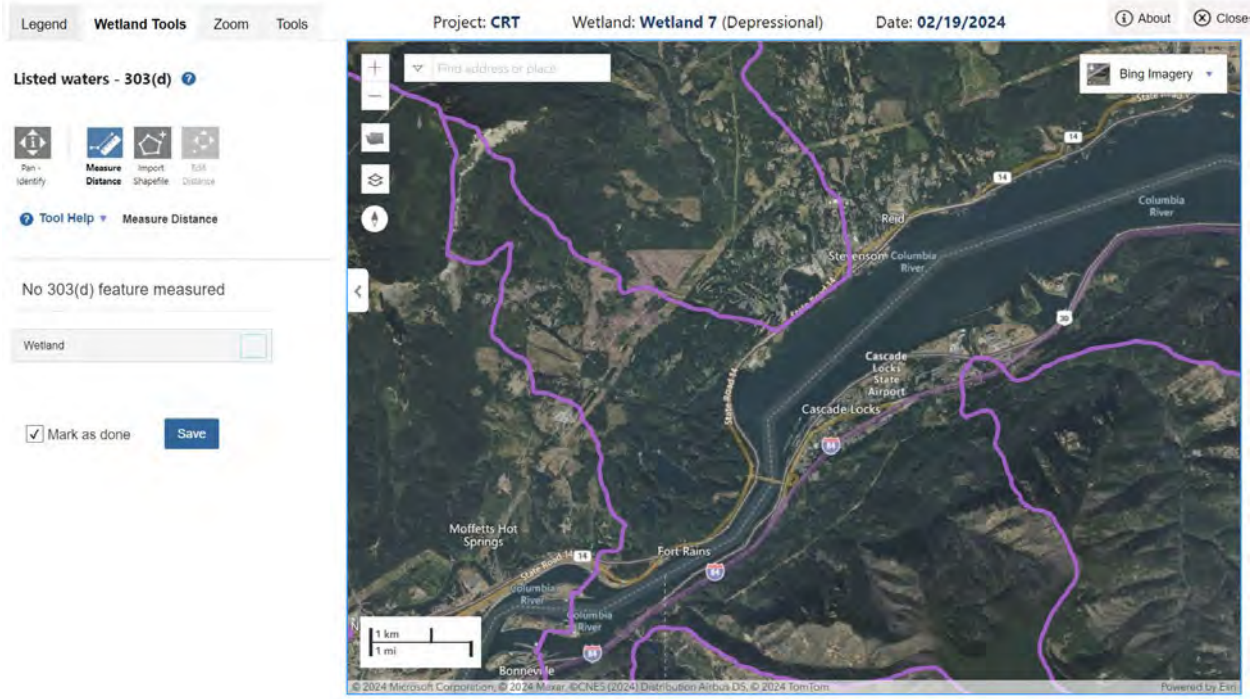

Figure 7: 303(d) listed waters in basin.

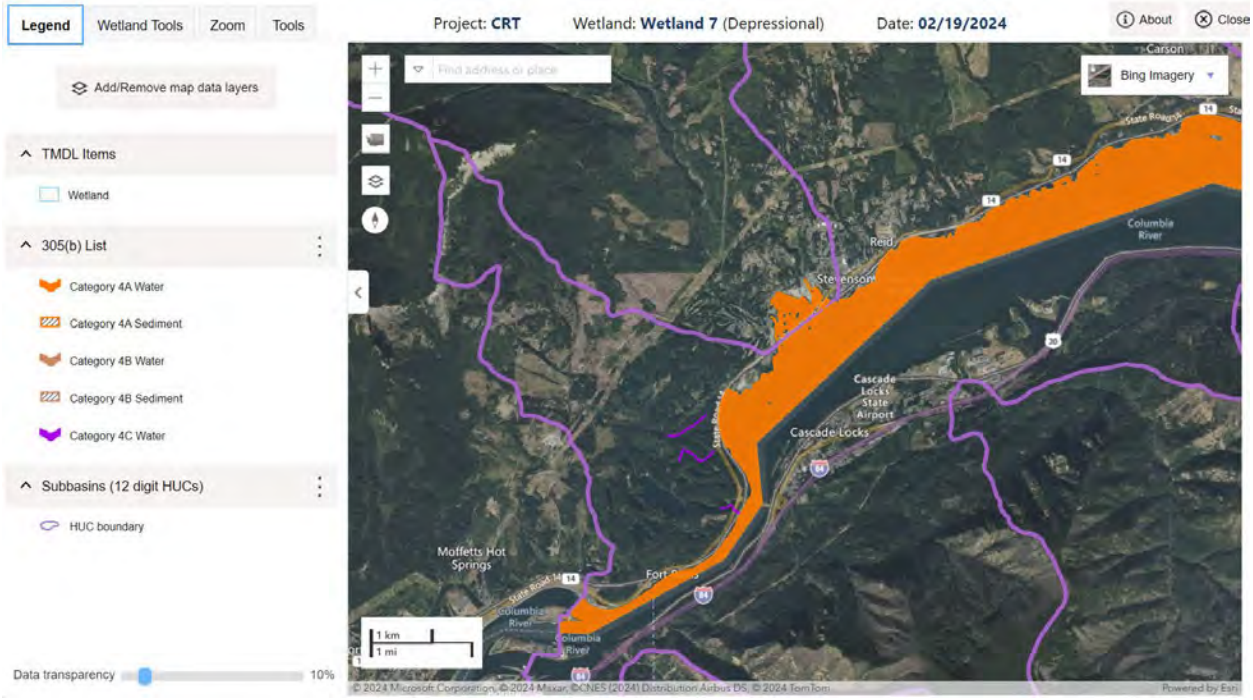

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W8

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W8 **Date of site visit:** 11/06/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category III**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[ ] **Category II** - Total score = 20 - 22

[X] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**L**	**L**	
Landscape Potential	**M**	**M**	**H**	
Value	**H**	**H**	**M**	**Total**
Score Based on Ratings	**7**	**6**	**6**	**19**

Score for each function based on three ratings
(order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W8

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W8

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 3**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 0**
	Total for D 1:	**8**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W8

D 2.5 What are the other sources of pollutants coming into the wetland?		
	Total for D 2:	**2**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 4**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 0**

Wetland name or number: W8

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 0**
	Total for D 4:	**4**

Rating of Site Potential [ ] **12-16 = H** [ ] **6-11 = M** [X] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**2**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W8

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [ ] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 0**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 0**

Wetland name or number: W8

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 0**

H 1.5 What are the special habitat features in the wetland?

- [ ] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [ ] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score:**

Total for H 1: **1**

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W8

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [ ] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 1**
	Total for H 3:	**1**

Rating of Value [ ] **2 = H** [X] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W8

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W8

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W8

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W8

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

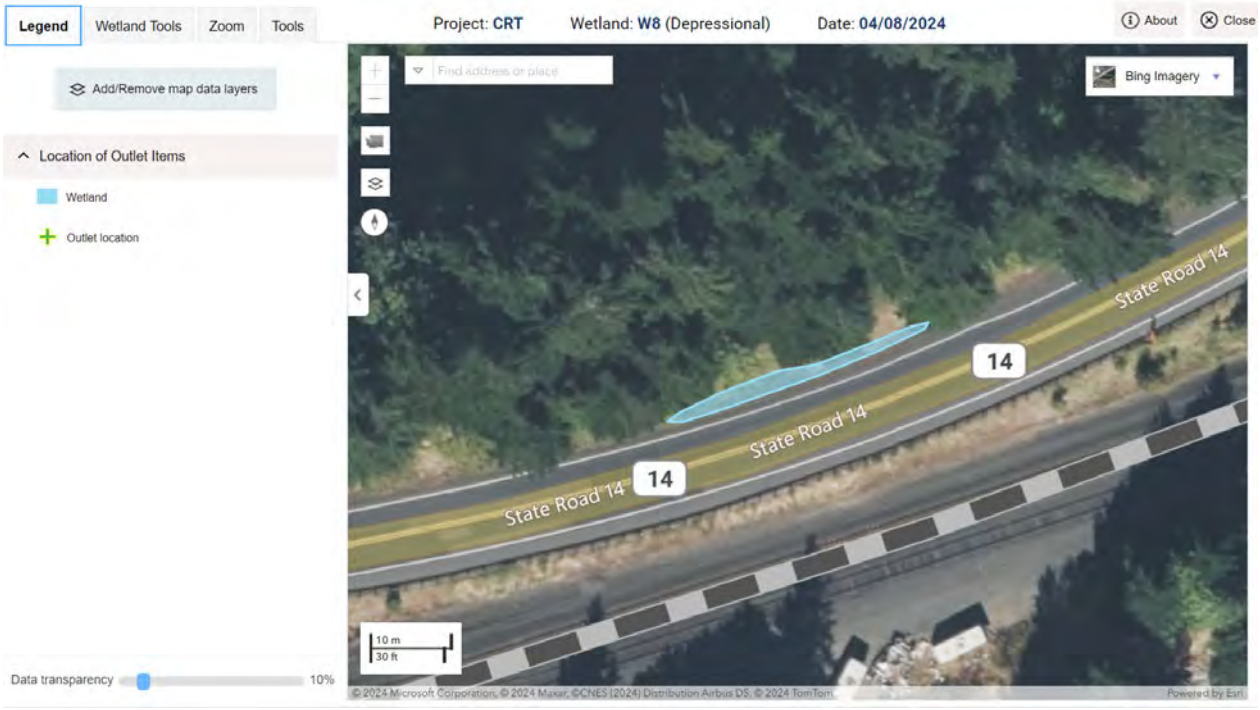

Figure 3: Outlet

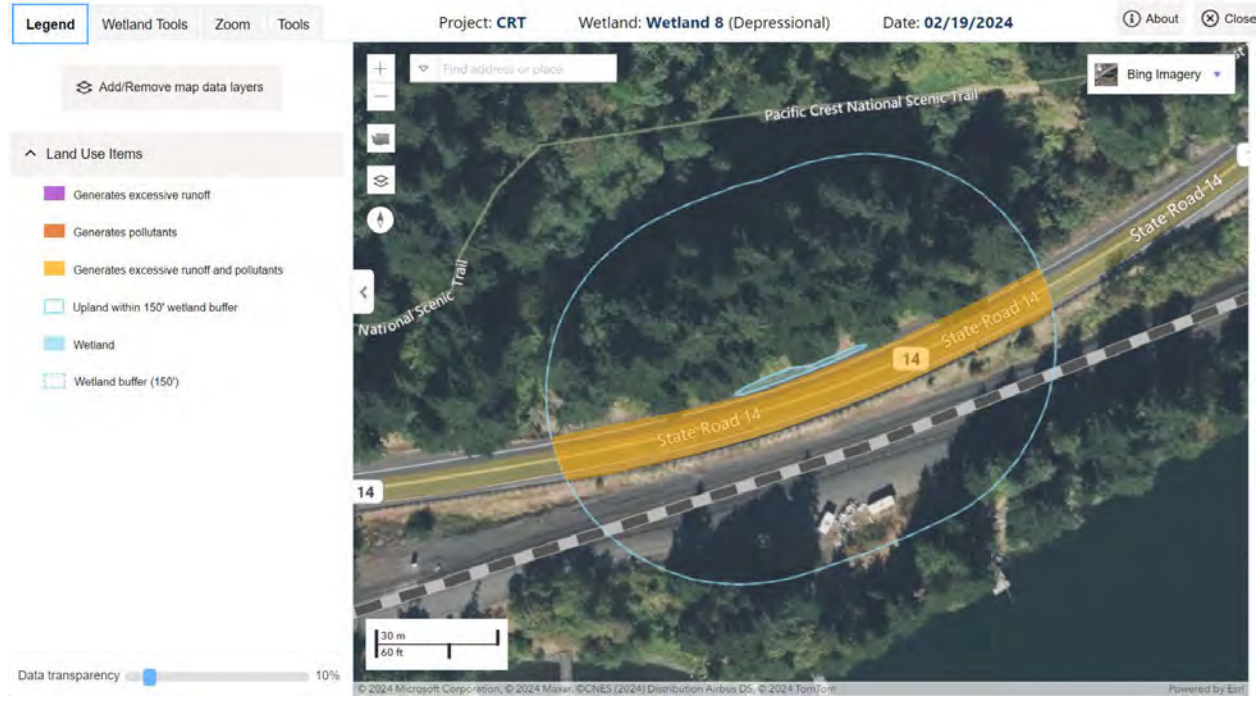

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

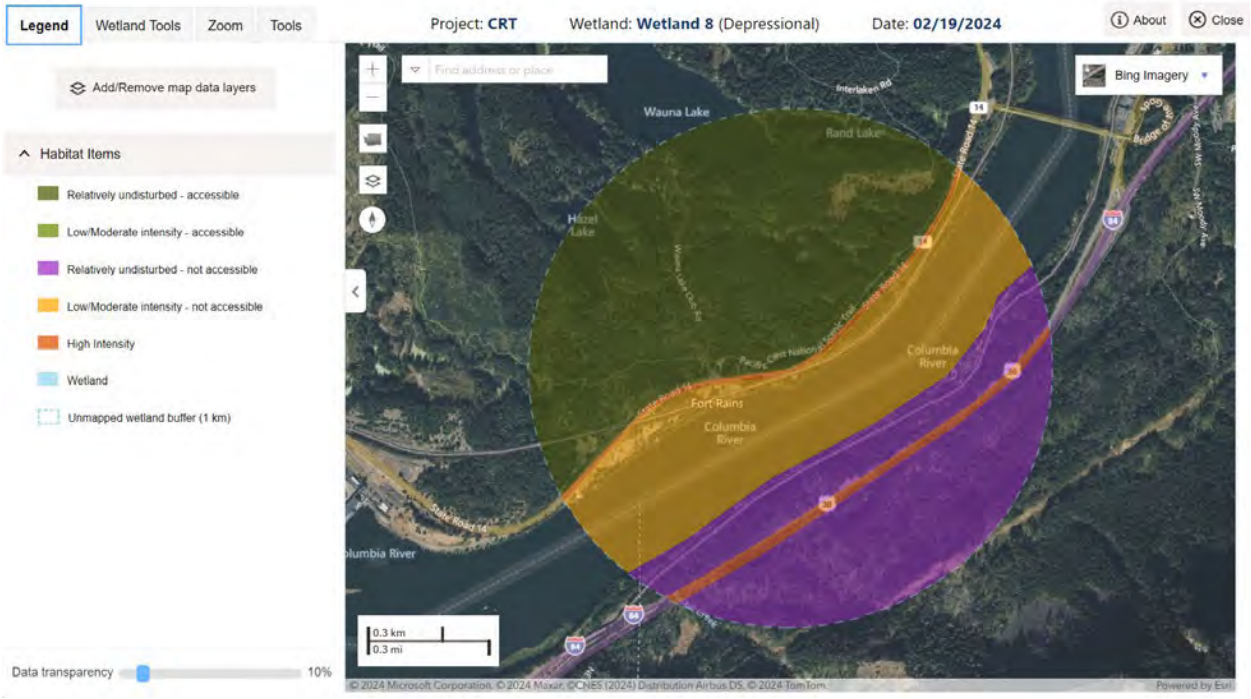

Figure 6: 1km polygon.

Figure 7: 303(d) listed waters in basin.

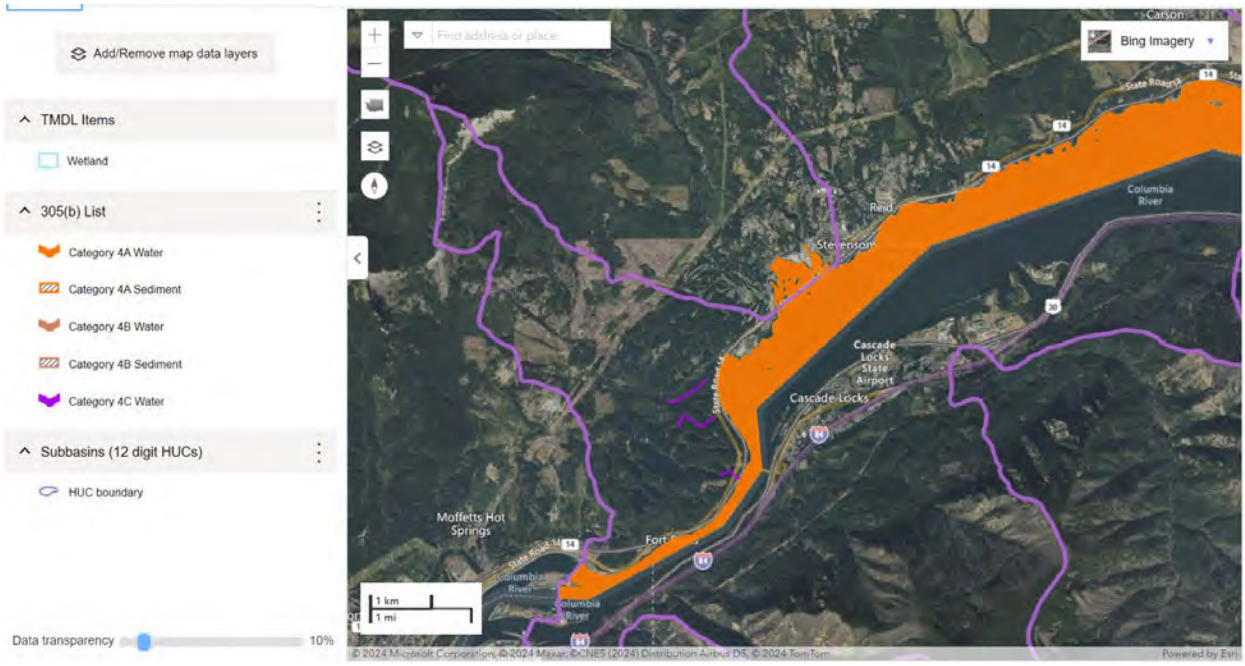

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W9

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W9 **Date of site visit:** 04/20/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Riverine

Wetland has multiple HGM classes? Yes [X] **No** [ ]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category II**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**M**	
Landscape Potential	**M**	**M**	**H**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**7**	**7**	**8**	**22**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W9

Maps and figures required to answer questions correctly for Western Washington

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Ponded depressions	R 1.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	4
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	5
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	6
Map of the contributing basin	R 2.2, R 2.3, R 5.2	7
1km Polygon: Area that extends 1km form entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	8
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	9
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	10

Wetland name or number: W9

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

R 1.0 Does the site have the potential to improve water quality?

R 1.1 What is the total area of surface depressions within the Riverine wetland that can trap sediments during a flooding event?

Depressions cover >75% area of wetland	points = 8	
Depressions cover >50% area of wetland	points = 4	
Depressions present but cover <50% area of wetland	points = 2	
No depressions present	points = 0	**Score: 2**

R 1.2 What is the structure of plants in the wetland?

Trees or shrubs cover >66% area of the wetland	points = 8	
Trees or shrubs cover 33% - 66% of the area of the wetland	points = 6	
Ungrazed, herbaceous plants cover (>6in high) >66% area of the wetland	points = 6	
Ungrazed, herbaceous plants cover (>6in high) 33%-66% of the area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous plants cover <33% area of the wetland	points = 0	**Score: 6**

Total for R 1: 8

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

R 2.0 Does the landscape have the potential to support the water quality function of the site?

R 2.1 Is the wetland within an incorporated city or within its UGA?

Yes	points = 2	
No	points = 0	**Score: 0**

R 2.2 Does the contributing basin to the wetland include a UGA or incorporated area?

Yes	points = 1	
No	points = 0	**Score: 0**

R 2.3 Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?

Yes	points = 1	
No	points = 0	**Score: 0**

R 2.4 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants?

Yes	points = 1	
No	points = 0	**Score: 0**

R 2.5 Are there other sources of pollutants coming into the wetland that are not listed in question R 2.1-R 2.4?

Yes	points = 1	
No	points = 0	**Score: 1**

R 2.6 What are the other sources of pollutants coming into the wetland?

A ditch contributing roadway runoff to the lower half of the wetland

Total for R 2: 1

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W9

R 3.0 Is the water quality improvement provided by the site valuable to society?		
R 3.1 Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi?		
Yes	points = 1	
No	points = 0	**Score: 0**
R 3.2 Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens?		
Yes	points = 1	
No	points = 0	**Score: 1**
R 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for R 3:	**3**

Rating of Value [X] **2-4 = H** [] **1 = M** [ ] **0 = L** *Record the rating on the first page*

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

R 4.0 Does the site have the potential to reduce flooding and erosion?		
R 4.1 What are the characteristics of the overbank storage the wetland provides?		
If the ratio is more than 20	points = 9	
If the ratio is 10-20	points = 6	
If the ratio is 5-<10	points = 4	
If the ratio is 1-<5	points = 2	
If the ratio is < 1	points = 1	**Score: 2**
R 4.2 What are the characteristics of plants that slow down water velocities during floods?		
Forest or shrubs cover >33% of the wetland area OR emergent plants cover >66% of the wetland area	points = 7	
Forest or shrubs cover >10% of the wetland area OR emergent plants cover >33% of the wetland area	points = 4	
Plants do not meet the above criteria	points = 0	**Score: 7**
	Total for R 4:	**9**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

Wetland name or number: W9

R 5.0 Does the landscape have the potential to support the hydrologic functions of the site?		
R 5.1 Is the stream or river adjacent to the wetland downcut?		
Yes	points = 0	
No	points = 1	**Score: 1**
R 5.2 Does the up-gradient watershed include a UGA or incorporated area?		
Yes	points = 1	
No	points = 0	**Score: 0**
R 5.3 Is the up-gradient stream or river controlled by dams?		
Yes	points = 0	
No	points = 1	**Score: 1**
	Total for R 5:	**2**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

R 6.0 Are the hydrologic functions provided by the site valuable to society?		
R 6.1 What is the distance to the nearest areas downstream that have flooding problems?		
The sub-basin immediately down-gradient of the wetland has flooding problems	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	**Score: 2**
R 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for R 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W9

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [x] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 2**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [ ] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [x] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W9

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 2**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 2**

Total for H 1: 8

Rating of Site Potential [ ] **15-18 = H** [X] **7-14 = M** [ ] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W9

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [✓] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W9

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal
☐ The wetland is vegetated
☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.
☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland
☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W9

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W9

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W9

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Ponded Depressions

Figure 4:Boundary of area within 150 feet of the wetland.

Figure 5: Plant Cover

Figure 6: Width

Figure 7: Contributing basin.

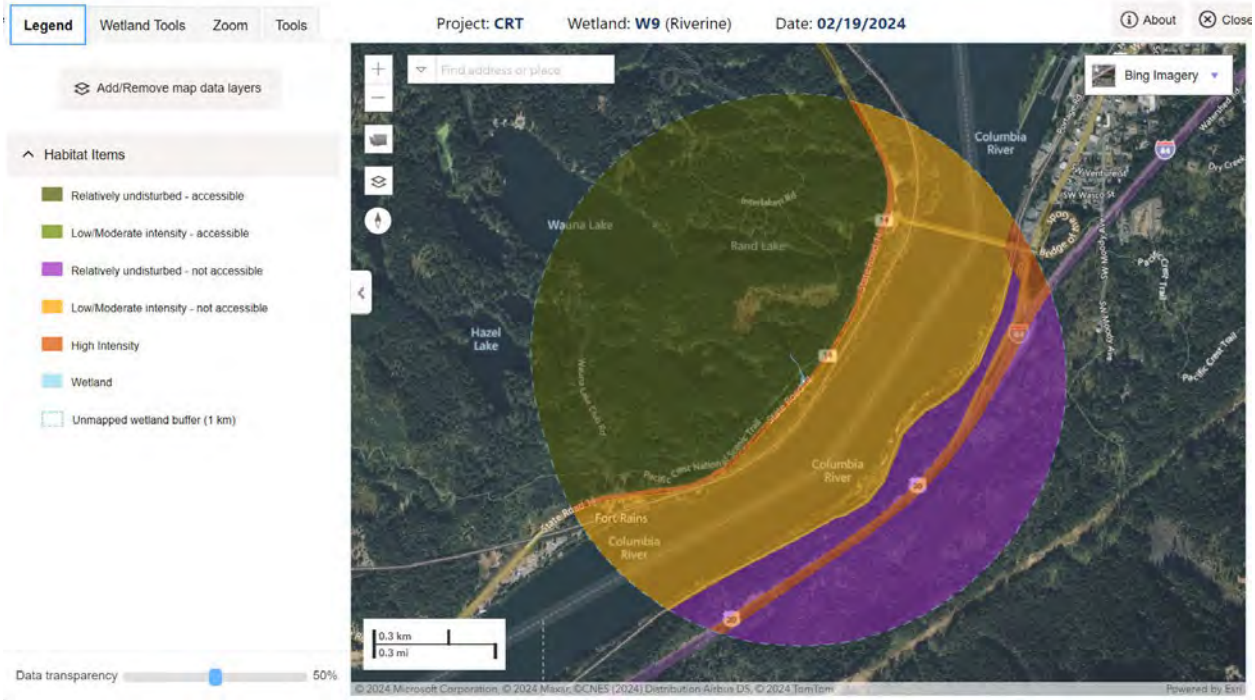

Figure 8: 1km polygon.

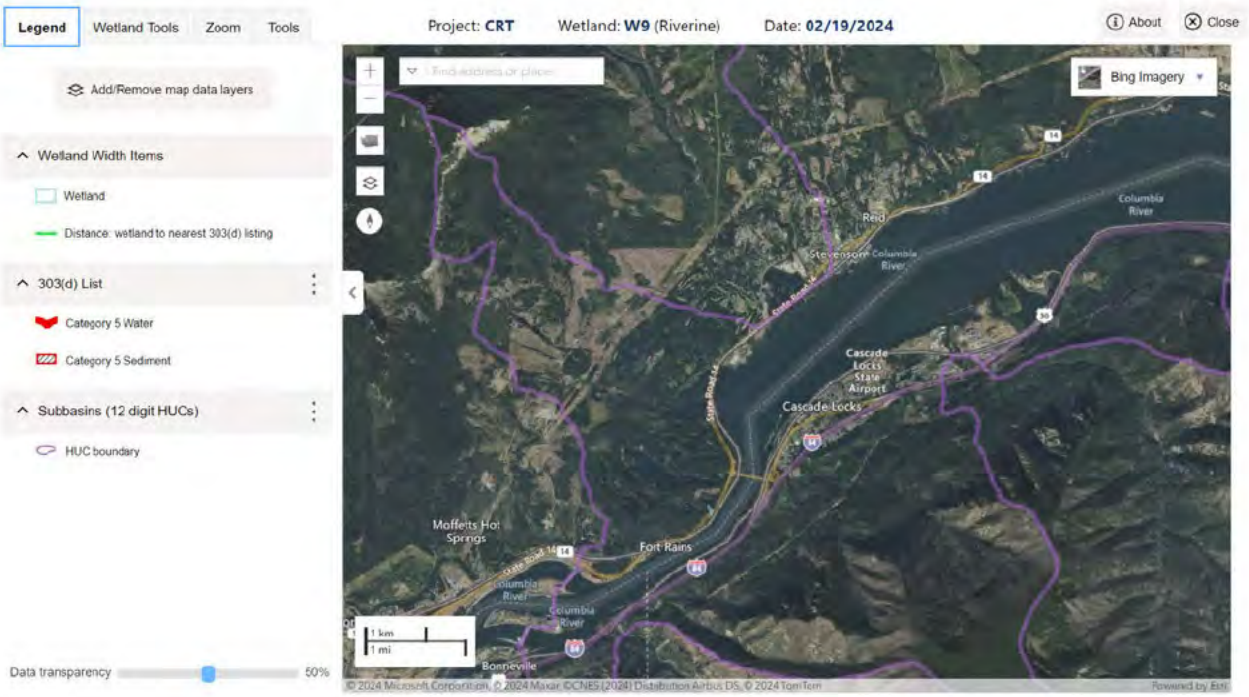

Figure 9: 303(d) listed waters in the basin.

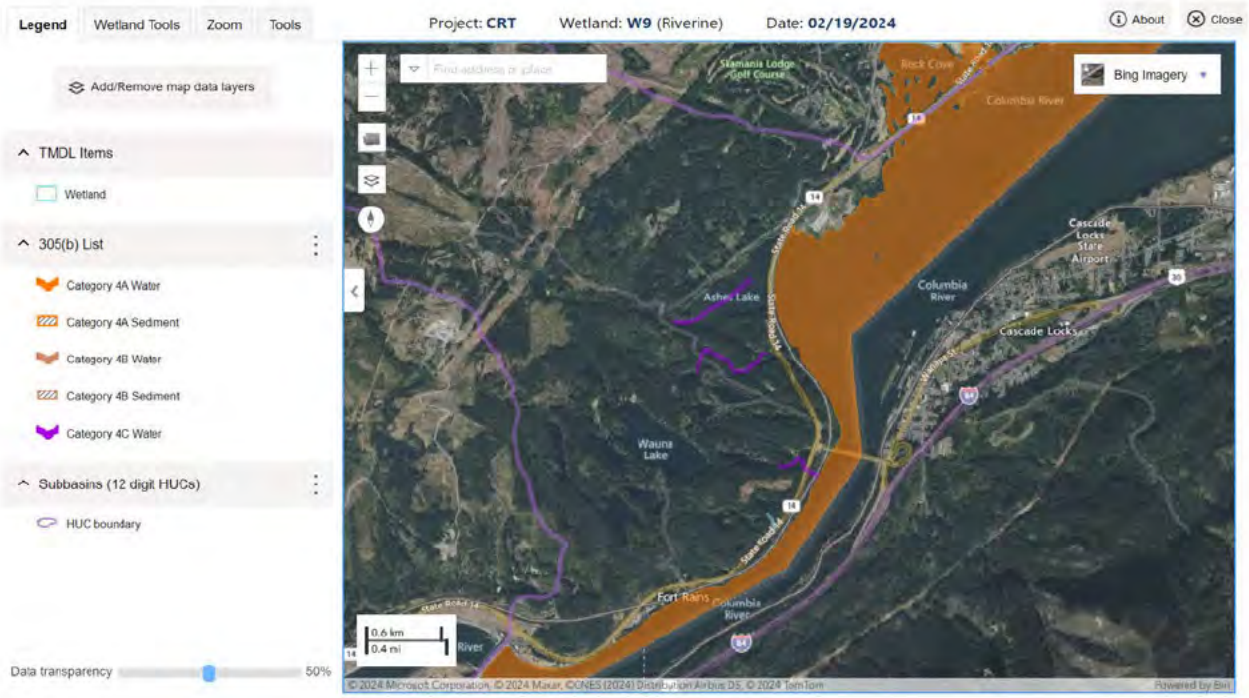

Figure 10: TMDLs for WRIA in which wetland is found.

Wetland name or number: W10

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W10 **Date of site visit:** 11/07/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category II**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**M**	
Landscape Potential	**M**	**M**	**H**	
Value	**H**	**H**	**M**	**Total**
Score Based on Ratings	**7**	**7**	**7**	**21**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W10

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W10

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 4**
	Total for D 1:	**11**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W10

D 2.5 What are the other sources of pollutants coming into the wetland?	
Total for D 2:	**2**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 3**

Wetland name or number: W10

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**8**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**2**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W10

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 1**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W10

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 2**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 2**

Total for H 1: 7

Rating of Site Potential [ ] **15-18 = H** [X] **7-14 = M** [ ] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W10

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 1**
	Total for H 3:	**1**

Rating of Value [ ] **2 = H** [X] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W10

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal
☐ The wetland is vegetated
☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.
☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland
☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W10

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W10

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W10

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

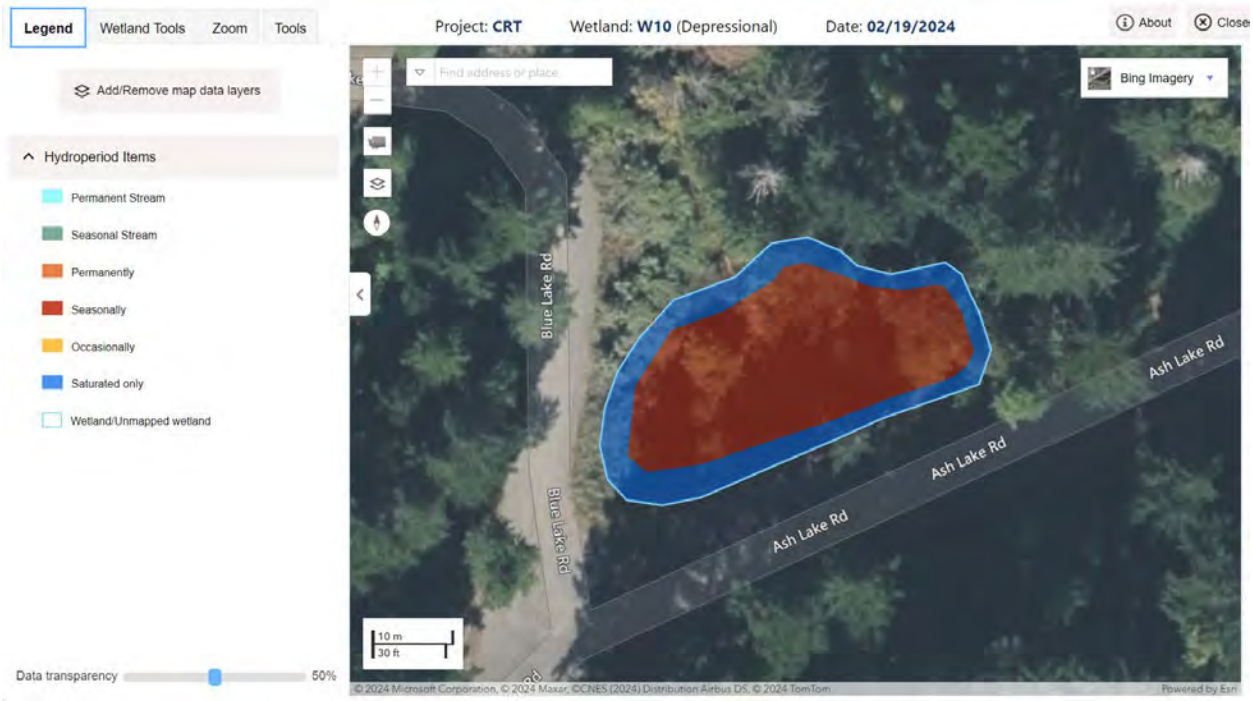

Figure 2: Hydroperiods

Figure 3: Outlet

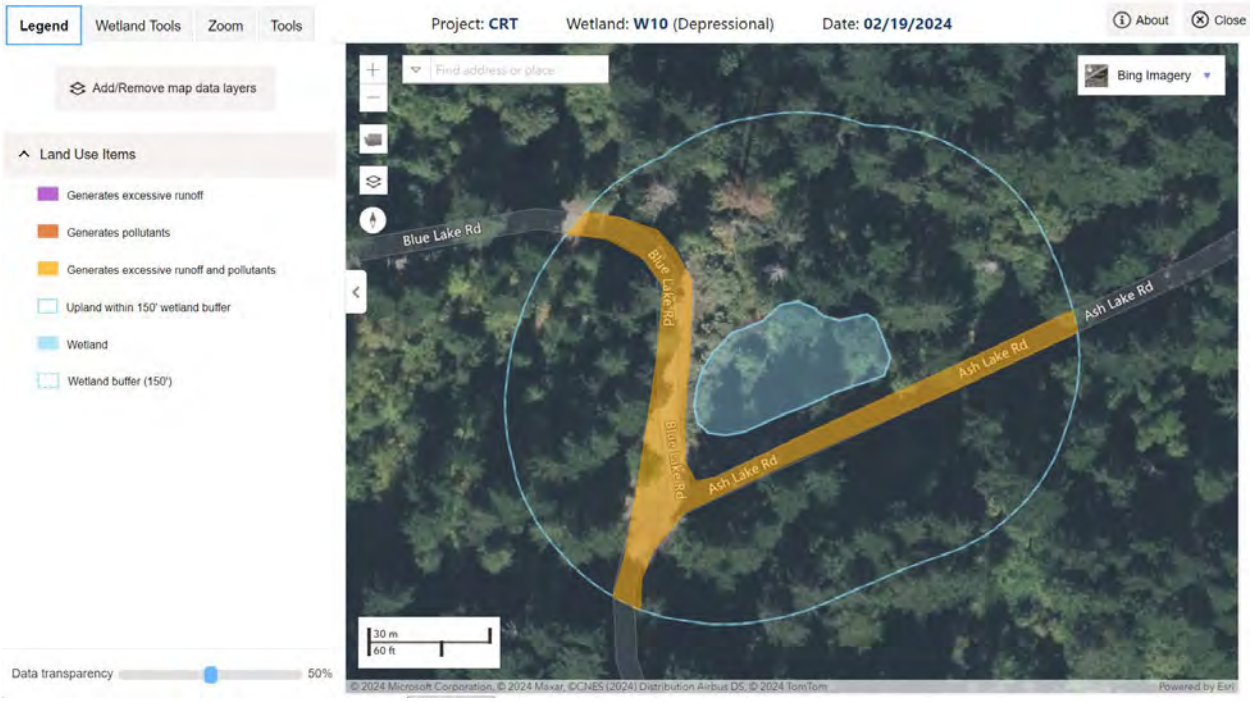

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

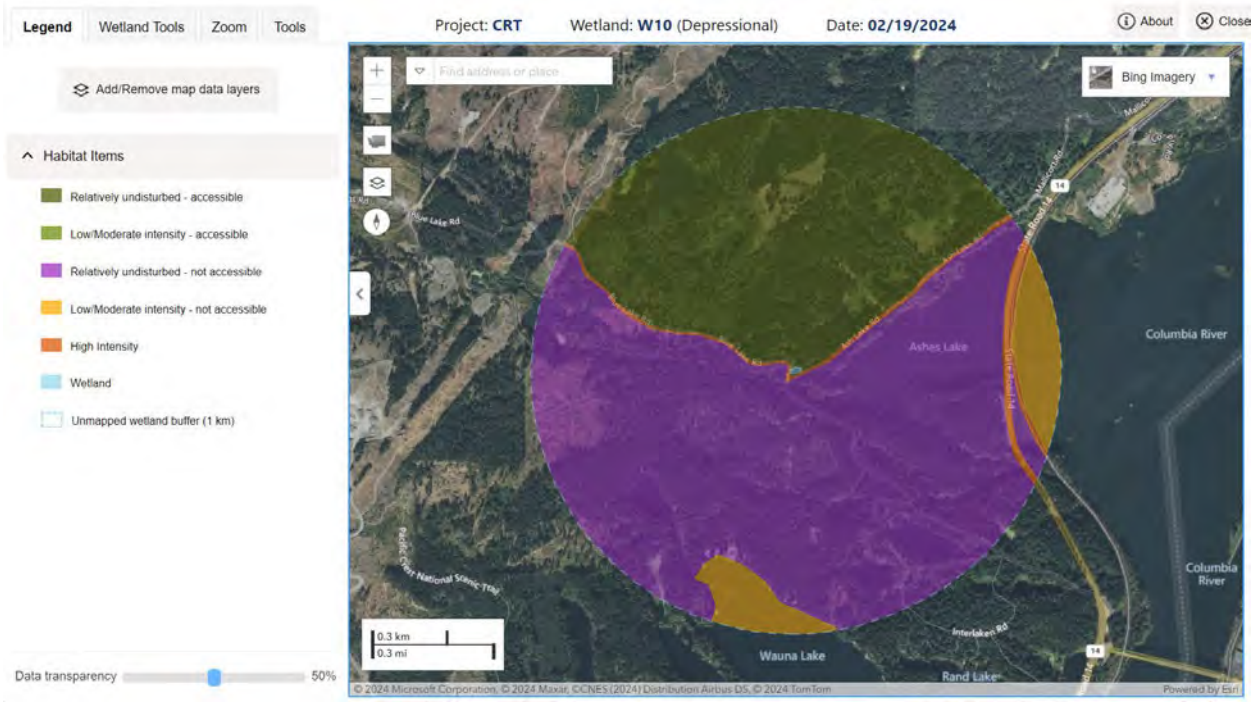

Figure 6: 1km polygon.

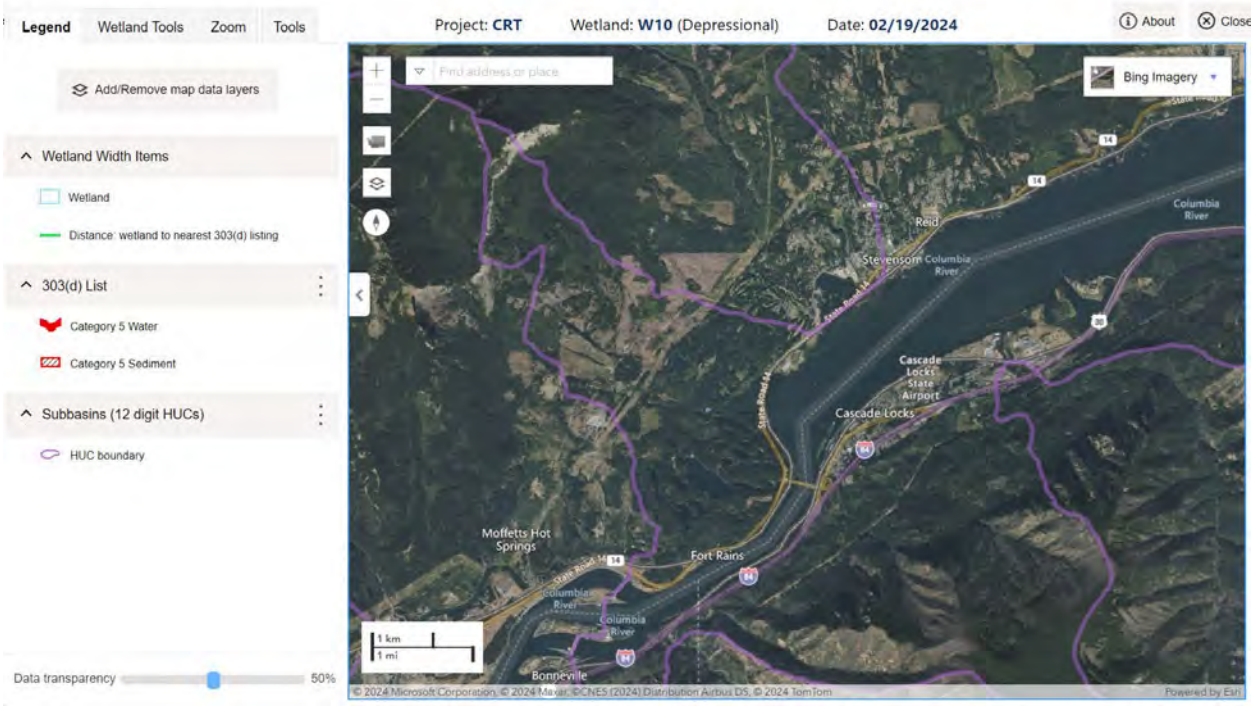

Figure 7: 303(d) listed waters in basin.

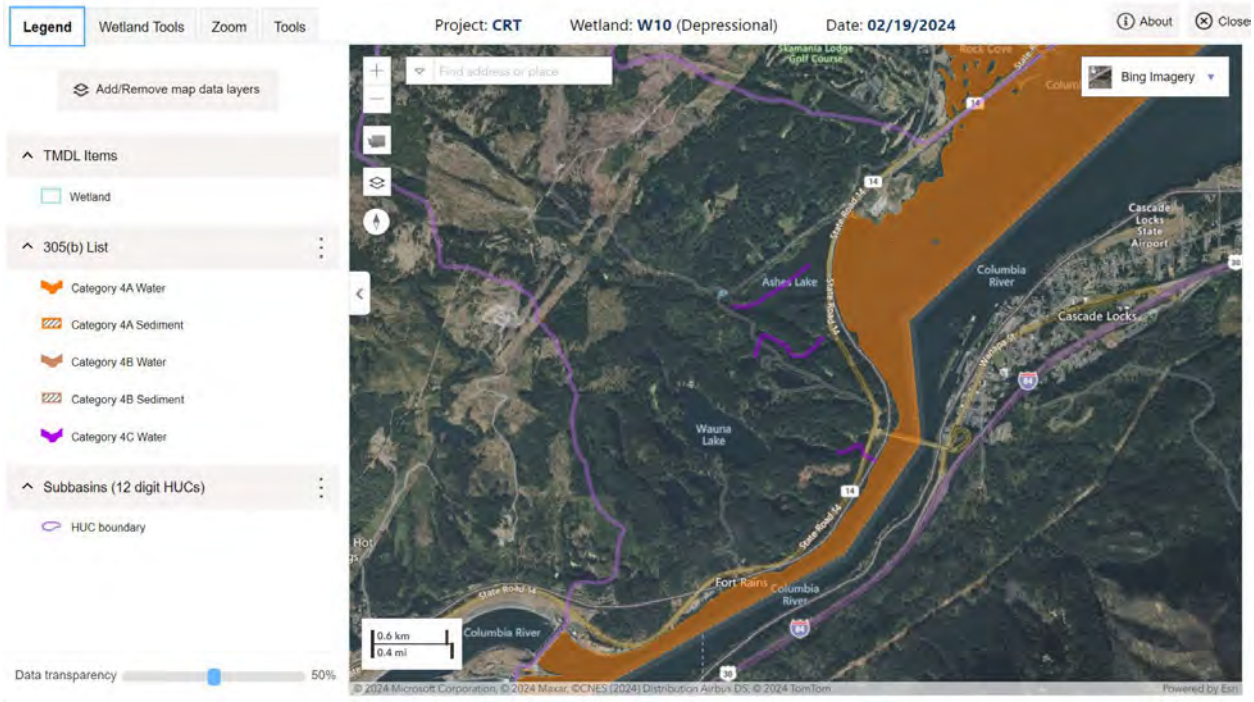

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W11

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W11 **Date of site visit:** 11/09/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [X] **No** [ ]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category II**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**M**	
Landscape Potential	**L**	**L**	**H**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**6**	**6**	**8**	**20**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W11

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W11

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 3**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 2**
	Total for D 1:	**7**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W11

D 2.5 What are the other sources of pollutants coming into the wetland?		
	Total for D 2:	**0**

Rating of Landscape Potential [ ] **3-4 = H** [ ] **1-2 = M** [X] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 3**

Wetland name or number: W11

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 5**
	Total for D 4:	**10**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**0**

Rating of Landscape Potential [ ] **3 = H** [ ] **1-2 = M** [X] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W11

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [x] Aquatic Bed
- [x] Emergent
- [x] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 4**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [x] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 2**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W11

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 3**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 2**

Total for H 1: 12

Rating of Site Potential [ ] **15-18 = H** [X] **7-14 = M** [ ] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W11

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [✓] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W11

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W11

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W11

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W11

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

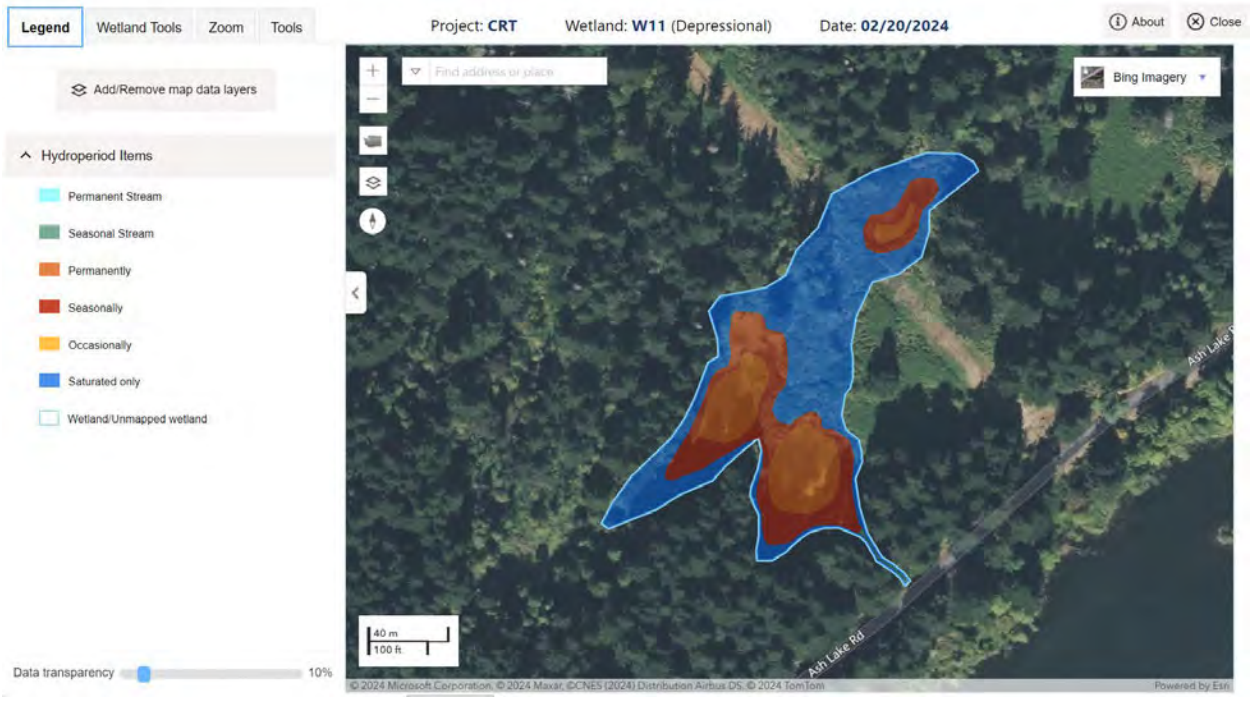

Figure 2: Hydroperiods

Figure 3: Outlet

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

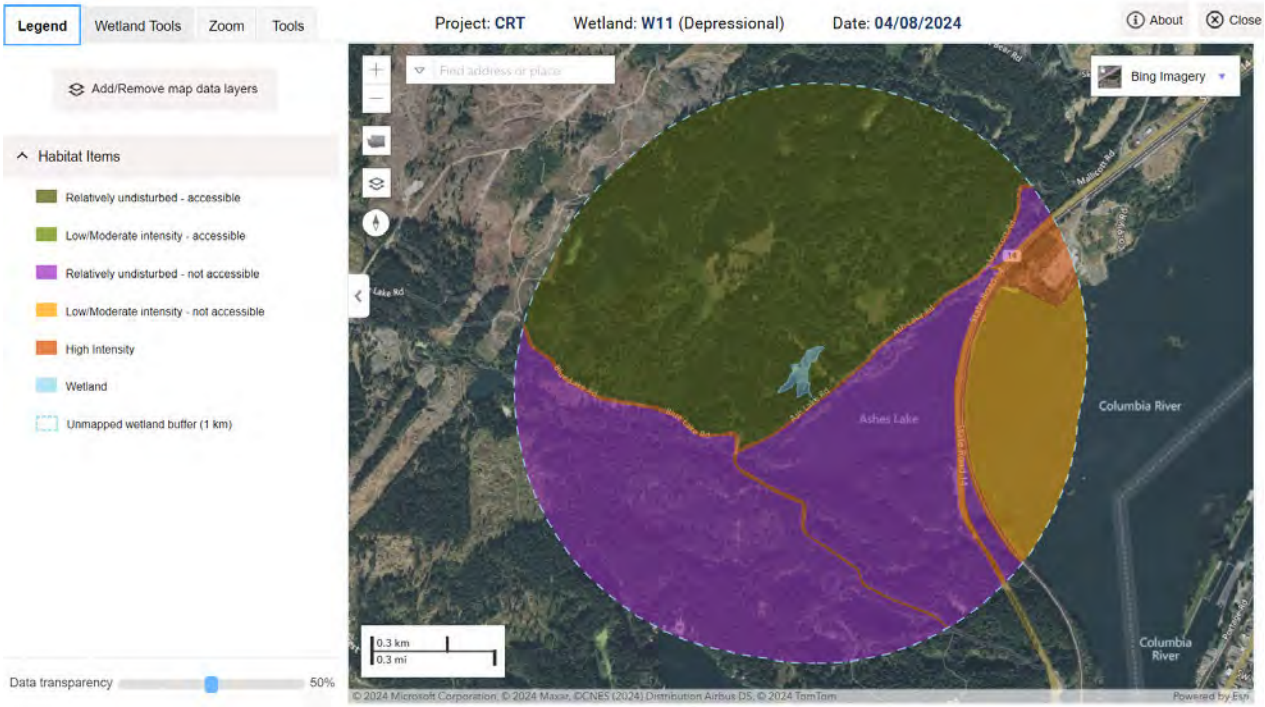

Figure 6: 1km polygon.

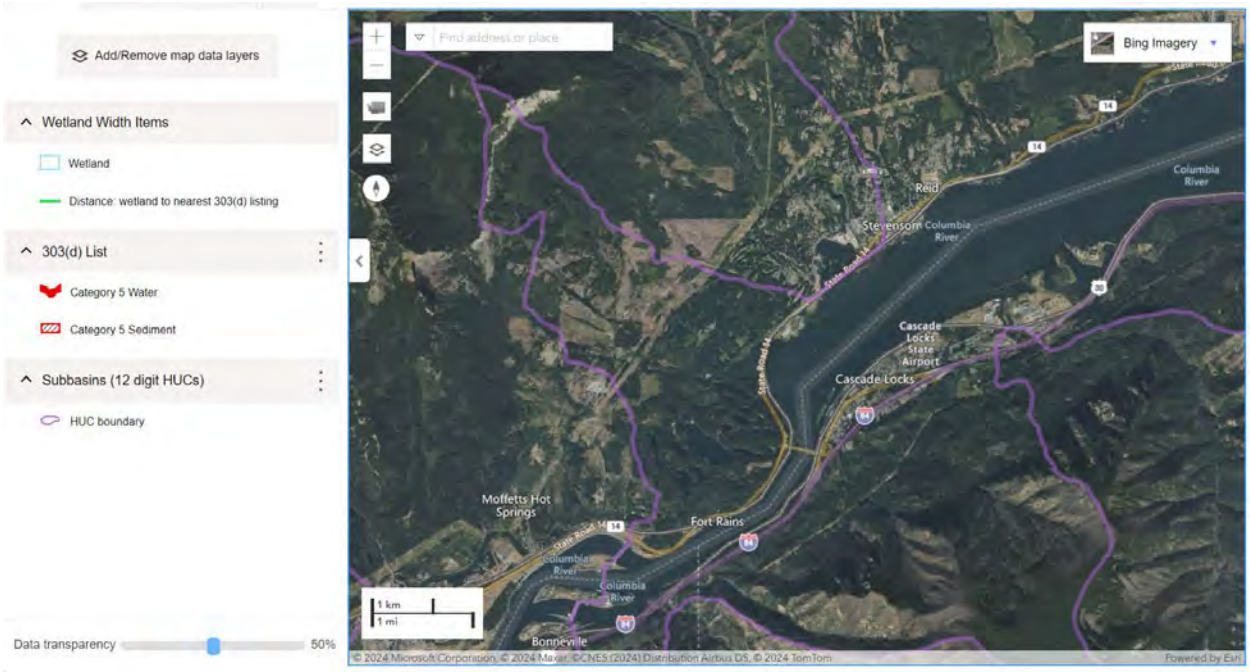

Figure 7: 303(d) listed waters in basin.

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W12

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W12 **Date of site visit:** 11/09/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category III**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[ ] **Category II** - Total score = 20 - 22

[X] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**L**	**L**	**L**	
Landscape Potential	**M**	**M**	**H**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**6**	**6**	**7**	**19**

Score for each function based on three ratings
(order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W12

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W12

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 3**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 0**
	Total for D 1:	**5**

Rating of Site Potential [ ] **12-16 = H** [ ] **6-11 = M** [X] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W12

D 2.5 What are the other sources of pollutants coming into the wetland?		
	Total for D 2:	**1**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 0**

Wetland name or number: W12

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**5**

Rating of Site Potential [ ] **12-16 = H** [ ] **6-11 = M** [X] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**1**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W12

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [ ] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 0**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W12

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 1**

H 1.5 What are the special habitat features in the wetland?

- [ ] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [ ] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score:**

Total for H 1: **3**

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W12

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [✓] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W12

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal
☐ The wetland is vegetated
☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.
☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland
☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W12

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3
No - Not a Bog Wetland **Result:**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W12

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W12

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Outlet

Figure 4: Boundary of 150’

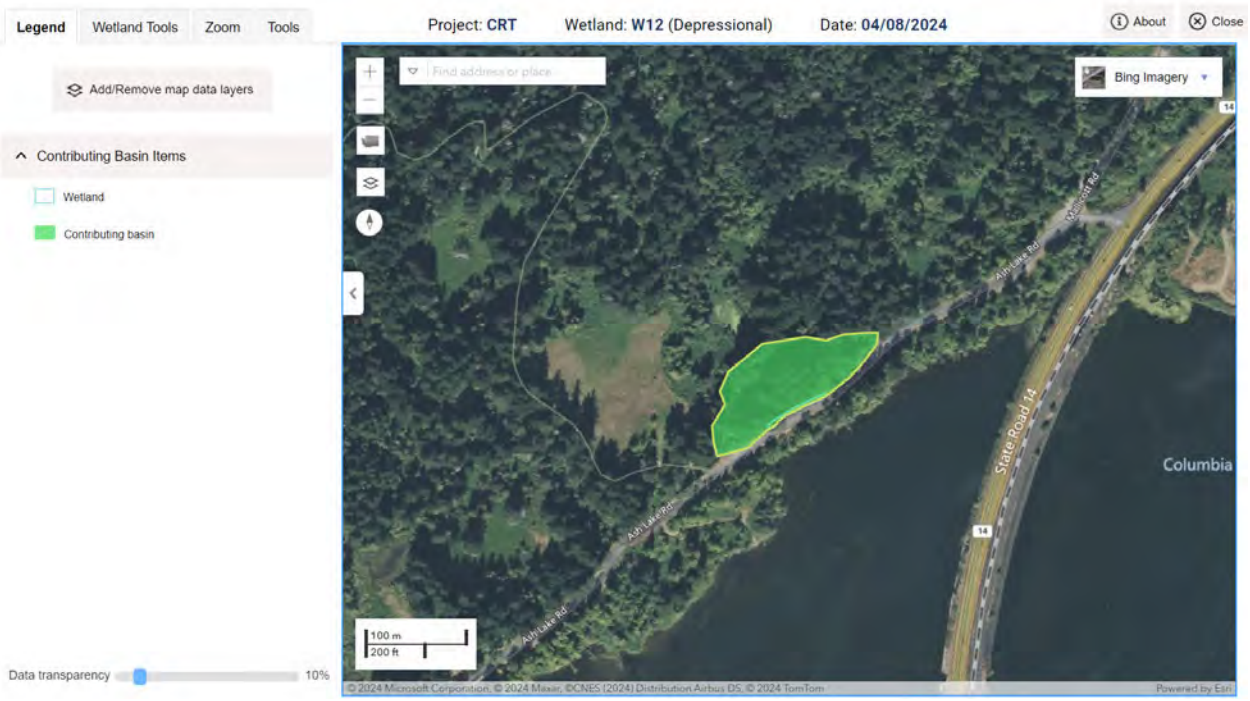

Figure 5: Contributing Basin

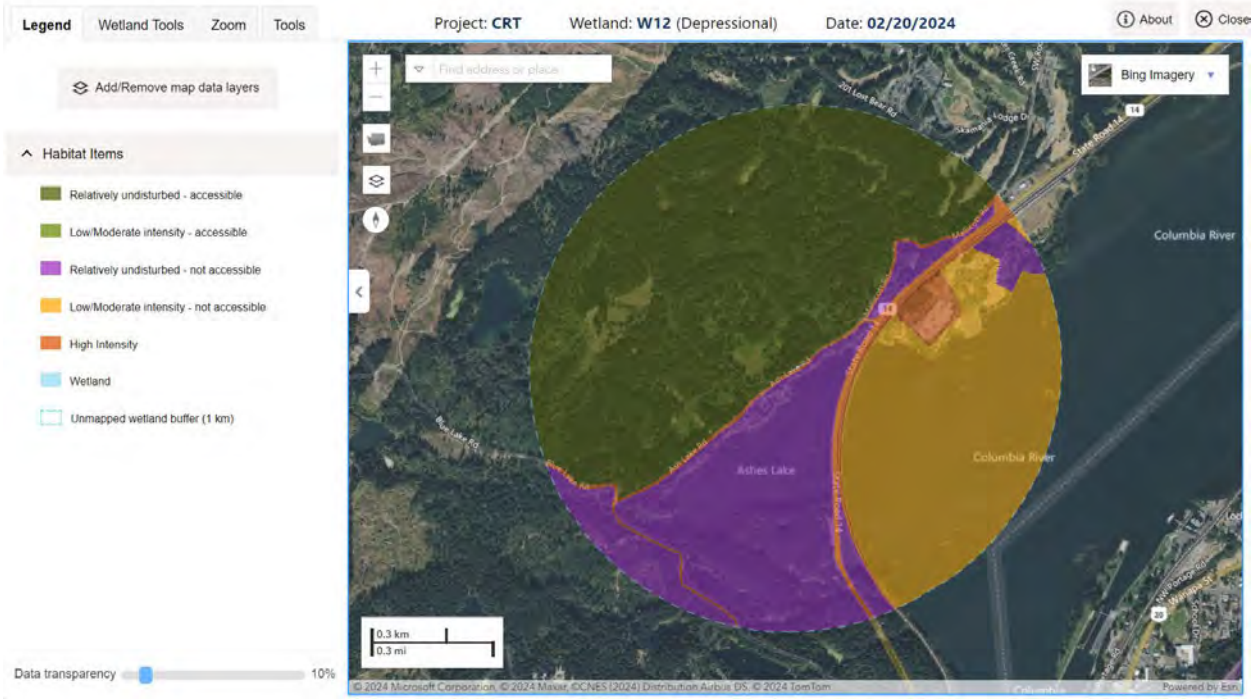

Figure 6: 1km polygon.

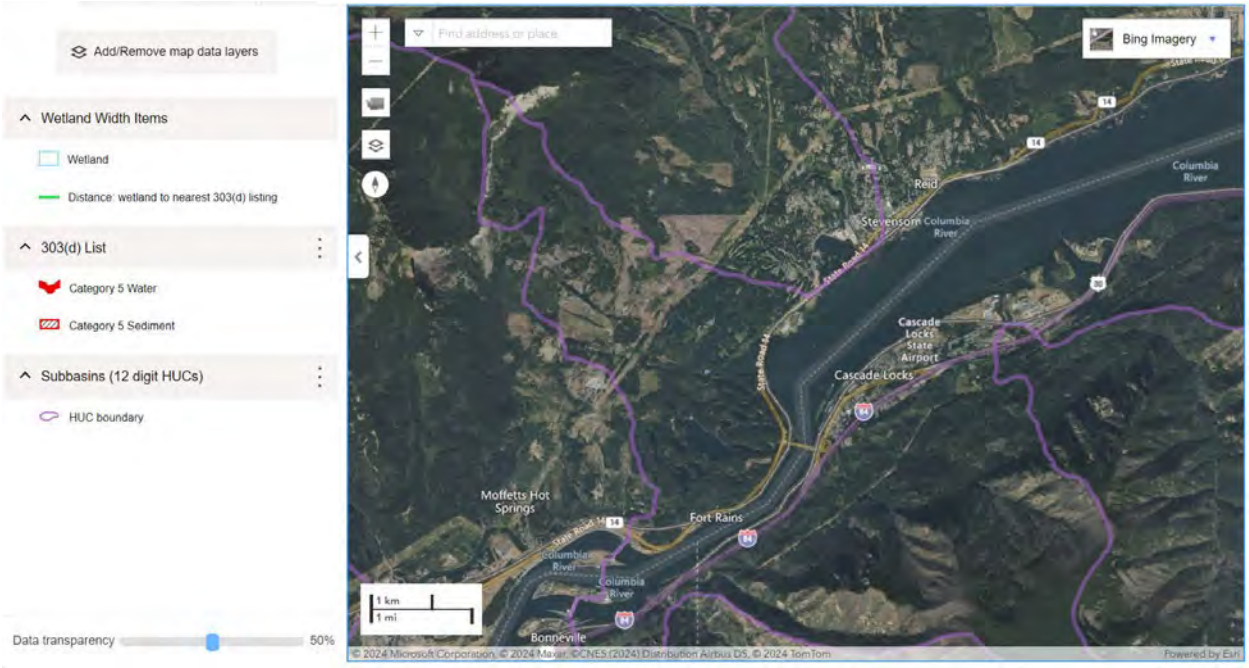

Figure 7: 303(d) listed waters in basin.

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W13

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W13 **Date of site visit:** 11/09/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Slope

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category III**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[ ] **Category II** - Total score = 20 - 22

[X] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**L**	**L**	**M**	
Landscape Potential	**M**	**L**	**H**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**6**	**5**	**8**	**19**

Score for each function based on three ratings
(order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W13

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	3
Plant cover of dense, rigid trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	4
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	S 2.1, S 5.1	4
1km Polygon: Area that extends 1km form entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	6
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	7

Wetland name or number: W13

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0 Does the site have the potential to improve water quality?

S 1.1 What are the characteristics of the average slope of the wetland?

Slope is 1% or less	points = 3	
Slope is >1%-2%	points = 2	
Slope is >2%-5%	points = 1	
Slope is greater than 5%	points = 0	**Score: 2**

S 1.2 What is the soil 2in below the surface or duff layer?

Mapped as true clay or organic (muck or peat)	points = 3	
Soil texture identified as clay or organic in field	points = 3	
Soil texture identified as clay or organic by laboratory test	points = 3	
None of the above	points = 0	**Score: 0**

S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants

Dense, uncut, herbaceous plants cover >90% of the wetland area	points = 6	
Dense, uncut, herbaceous plants cover >50% of the wetland area	points = 3	
Dense, woody, plants cover >50% of the wetland area	points = 2	
Dense, uncut, herbaceous plants cover >25% of the wetland area	points = 1	
Does not meet any of the criteria above for plants	points = 0	**Score: 3**

Total for S 1: 5

Rating of Site Potential [ ] **12-16 = H** [ ] **6-11 = M** [X] **0-5 = L** *Record the rating on the first page*

S 2.0 Does the landscape have the potential to support the water quality function of the site?

S 2.1 Is >10% of the area within 150ft on the uphill side of the wetland in land uses that generate pollutants?

Yes	points = 1	
No	points = 0	**Score: 1**

S 2.2 Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?

Yes	points = 1	
No	points = 0	**Score: 0**

S 2.3 What are the other sources of pollutants coming into the wetland?

Total for S 2: 1

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W13

S 3.0 Is the water quality improvement provided by the site valuable to society?		
S 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
S 3.2 Is the wetland in a basin or sub-basin where water quality is an issue?		
Yes	points = 1	
No	points = 0	**Score: 0**
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for S 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

S 4.0 Does the site have the potential to reduce flooding and erosion?		
S 4.1 What are the characteristics of the plants that reduce the velocity of surface flows during storms?		
Dense, uncut, rigid plants cover >90% of the wetland area	points = 1	
All other conditions	points = 0	**Score: 0**
	Total for S 4:	**0**

Rating of Site Potential [ ] **1 = M** [X] **0 = L** *Record the rating on the first page*

S 5.0 Does the landscape have the potential to support the hydrologic functions of the site?		
S 5.1 Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for S 5:	**0**

Rating of Landscape Potential [ ] **1 = M** [X] **0 = L** *Record the rating on the first page*

Wetland name or number: W13

S 6.0 Are the hydrologic functions provided by the site valuable to society?		
S 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
There are no problems with flooding downstream of the wetland	points = 0	**Score: 2**
S 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for S 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W13

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 1**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W13

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 2**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 2**

Total for H 1: 7

Rating of Site Potential [ ] **15-18 = H** [X] **7-14 = M** [ ] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W13

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [✓] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W13

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland **Result: Not an Estuarine Wetland**

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3 **Result:**

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland **Result:**

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2 **Result: Go to SC 2.2**

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value **Result:**

Wetland name or number: W13

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W13

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland

Result: Not a Coastal Lagoon Wetland

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon

Result:

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland

Result: Not an Interdunal Wetland

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4

Result:

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland

Result:

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland

Result:

Wetland name or number: W13

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Plant Cover of Dense and Rigid Trees, Shrubs, and Herbaceous Plants

Figure 3: Boundary of area within 150 feet of the wetland.

Figure 5: 1km polygon.

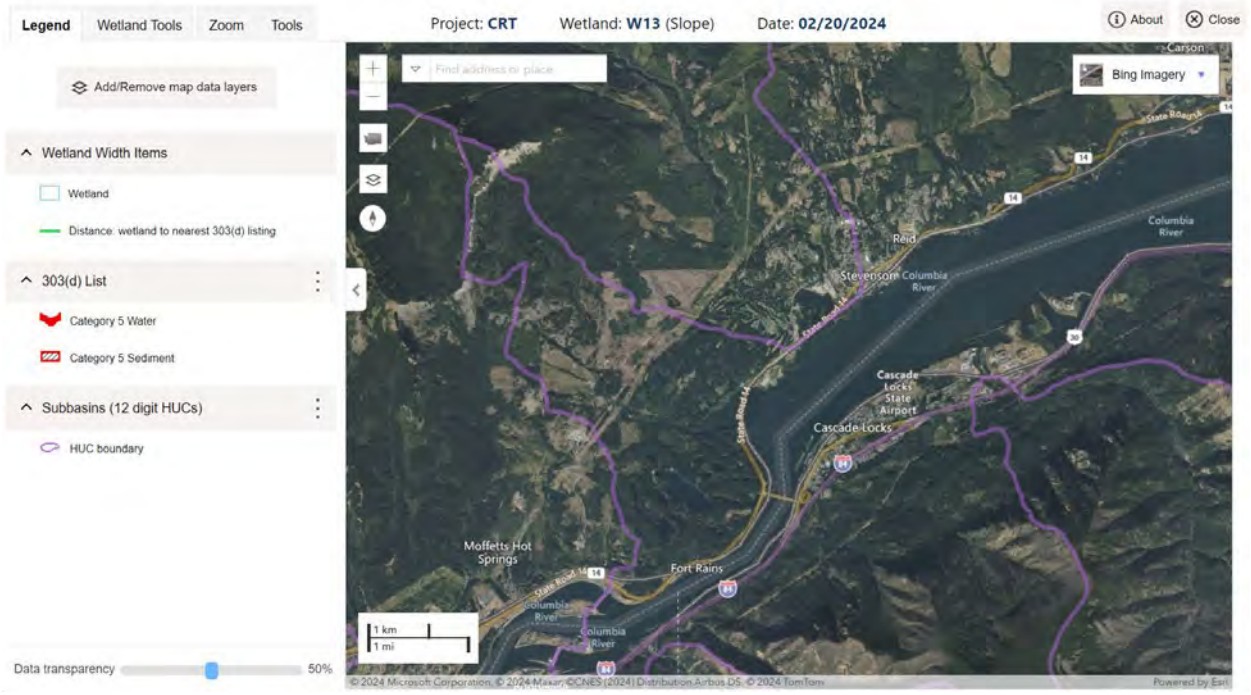

Figure 6: 303(d) listed waters in basin.

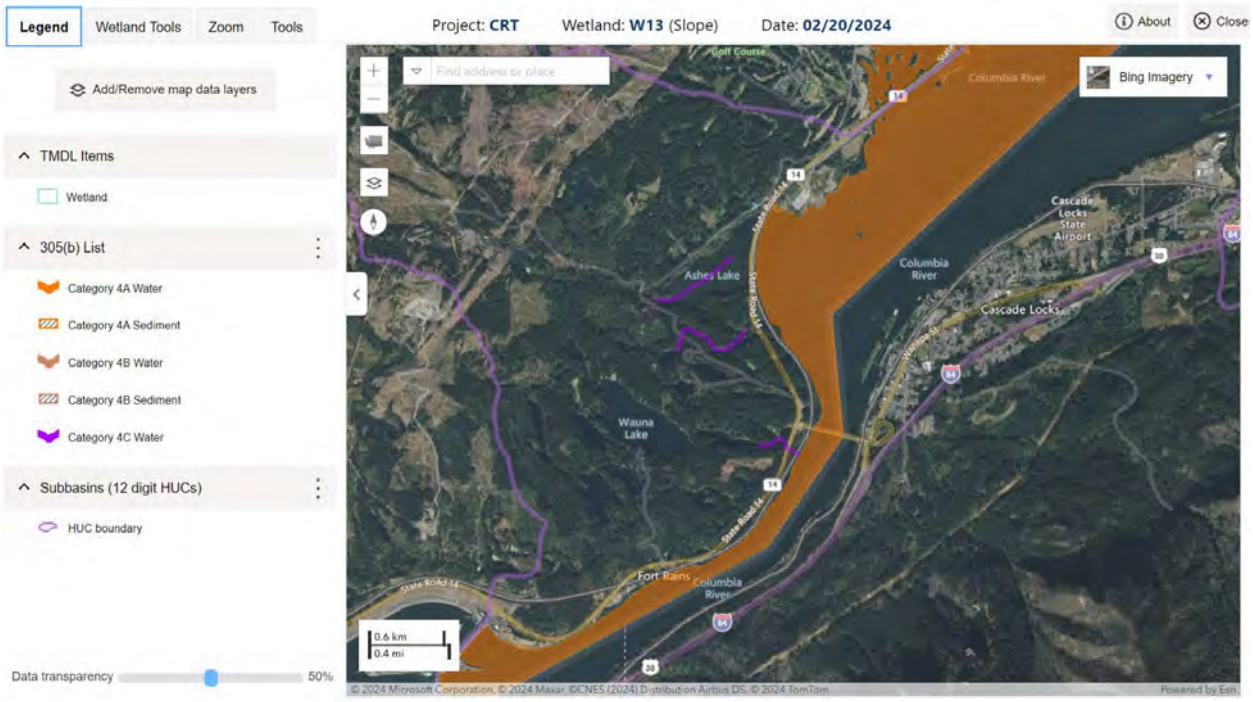

Figure 7: TMDLs for WRIA in which wetland is found.

Wetland name or number: W14

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W14 **Date of site visit:** 11/09/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Slope

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category II**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**L**	**M**	
Landscape Potential	**M**	**M**	**H**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**7**	**6**	**8**	**21**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W14

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	3
Plant cover of dense, rigid trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	4
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	S 2.1, S 5.1	4
1km Polygon: Area that extends 1km form entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	6
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	7

Wetland name or number: W14

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0 Does the site have the potential to improve water quality?

S 1.1 What are the characteristics of the average slope of the wetland?

Slope is 1% or less	points = 3	
Slope is >1%-2%	points = 2	
Slope is >2%-5%	points = 1	
Slope is greater than 5%	points = 0	**Score: 1**

S 1.2 What is the soil 2in below the surface or duff layer?

Mapped as true clay or organic (muck or peat)	points = 3	
Soil texture identified as clay or organic in field	points = 3	
Soil texture identified as clay or organic by laboratory test	points = 3	
None of the above	points = 0	**Score: 3**

S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants

Dense, uncut, herbaceous plants cover >90% of the wetland area	points = 6	
Dense, uncut, herbaceous plants cover >50% of the wetland area	points = 3	
Dense, woody, plants cover >50% of the wetland area	points = 2	
Dense, uncut, herbaceous plants cover >25% of the wetland area	points = 1	
Does not meet any of the criteria above for plants	points = 0	**Score: 3**

Total for S 1: 7

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

S 2.0 Does the landscape have the potential to support the water quality function of the site?

S 2.1 Is >10% of the area within 150ft on the uphill side of the wetland in land uses that generate pollutants?

Yes	points = 1	
No	points = 0	**Score: 1**

S 2.2 Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?

Yes	points = 1	
No	points = 0	**Score: 0**

S 2.3 What are the other sources of pollutants coming into the wetland?

Total for S 2: 1

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W14

S 3.0 Is the water quality improvement provided by the site valuable to society?		
S 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
S 3.2 Is the wetland in a basin or sub-basin where water quality is an issue?		
Yes	points = 1	
No	points = 0	**Score: 0**
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for S 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

S 4.0 Does the site have the potential to reduce flooding and erosion?		
S 4.1 What are the characteristics of the plants that reduce the velocity of surface flows during storms?		
Dense, uncut, rigid plants cover >90% of the wetland area	points = 1	
All other conditions	points = 0	**Score: 0**
	Total for S 4:	**0**

Rating of Site Potential [ ] **1 = M** [X] **0 = L** *Record the rating on the first page*

S 5.0 Does the landscape have the potential to support the hydrologic functions of the site?		
S 5.1 Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
	Total for S 5:	**1**

Rating of Landscape Potential [X] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W14

S 6.0 Are the hydrologic functions provided by the site valuable to society?		
S 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
There are no problems with flooding downstream of the wetland	points = 0	**Score: 2**
S 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for S 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W14

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [x] Aquatic Bed
- [x] Emergent
- [x] Scrub-shrub
- [ ] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 2**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [ ] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [x] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W14

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 2**

H 1.5 What are the special habitat features in the wetland?

- [ ] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [ ] Standing snags (dbh >4in) within the wetland
- [x] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 1**

Total for H 1: 7

Rating of Site Potential [ ] **15-18 = H** [X] **7-14 = M** [ ] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 2**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W14

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**5**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [✓] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [✓] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [ ] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W14

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal
☐ The wetland is vegetated
☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.
☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland
☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W14

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3
No - Not a Bog Wetland **Result:**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W14

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W14

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Plant Cover of Dense and Rigid Trees, Shrubs, and Herbaceous Plants

Figure 3: Boundary of area within 150 feet of the wetland.

Figure 5: 1km polygon.

Figure 6: 303(d) listed waters in basin.

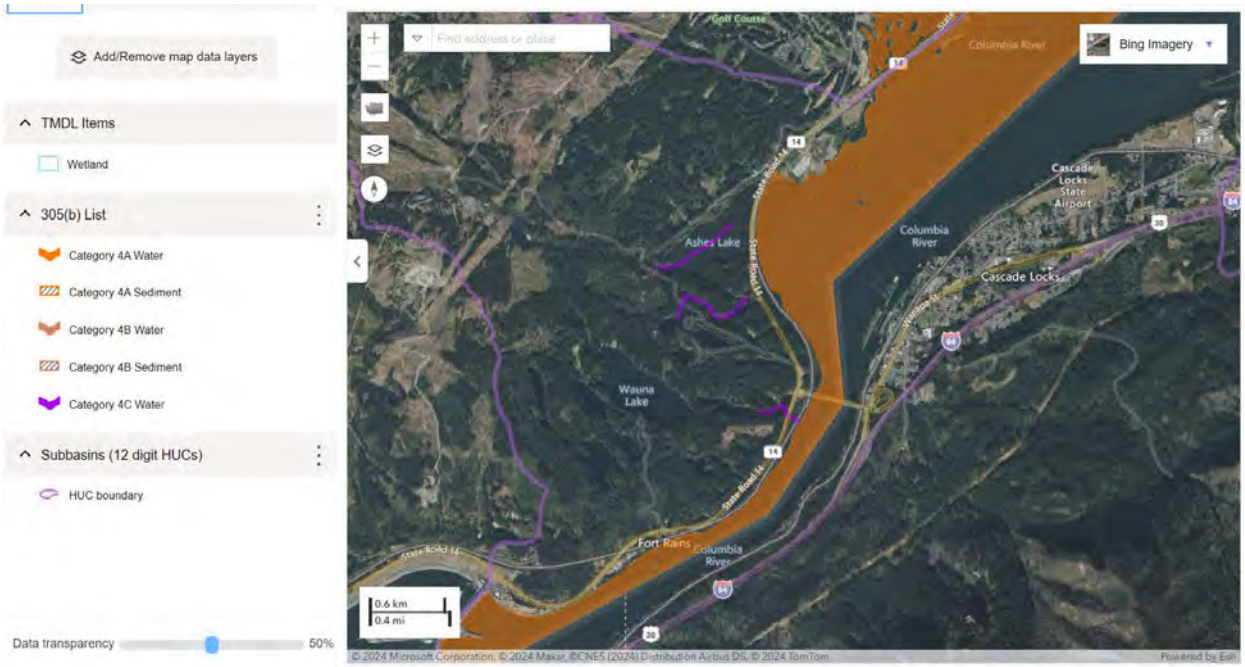

Figure 7: TMDLs for WRIA in which wetland is found.

Wetland name or number: W15

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W15 **Date of site visit:** 11/09/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Slope

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category II**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**M**	
Landscape Potential	**M**	**M**	**M**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**7**	**7**	**7**	**21**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W15

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	3
Plant cover of dense, rigid trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	4
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	S 2.1, S 5.1	4
1km Polygon: Area that extends 1km form entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	6
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	7

Wetland name or number: W15

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0 Does the site have the potential to improve water quality?

S 1.1 What are the characteristics of the average slope of the wetland?

Slope is 1% or less	points = 3	
Slope is >1%-2%	points = 2	
Slope is >2%-5%	points = 1	
Slope is greater than 5%	points = 0	**Score: 1**

S 1.2 What is the soil 2in below the surface or duff layer?

Mapped as true clay or organic (muck or peat)	points = 3	
Soil texture identified as clay or organic in field	points = 3	
Soil texture identified as clay or organic by laboratory test	points = 3	
None of the above	points = 0	**Score: 3**

S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants

Dense, uncut, herbaceous plants cover >90% of the wetland area	points = 6	
Dense, uncut, herbaceous plants cover >50% of the wetland area	points = 3	
Dense, woody, plants cover >50% of the wetland area	points = 2	
Dense, uncut, herbaceous plants cover >25% of the wetland area	points = 1	
Does not meet any of the criteria above for plants	points = 0	**Score: 6**

Total for S 1: 10

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

S 2.0 Does the landscape have the potential to support the water quality function of the site?

S 2.1 Is >10% of the area within 150ft on the uphill side of the wetland in land uses that generate pollutants?

Yes	points = 1	
No	points = 0	**Score: 1**

S 2.2 Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?

Yes	points = 1	
No	points = 0	**Score: 0**

S 2.3 What are the other sources of pollutants coming into the wetland?

Total for S 2: 1

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W15

S 3.0 Is the water quality improvement provided by the site valuable to society?		
S 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
S 3.2 Is the wetland in a basin or sub-basin where water quality is an issue?		
Yes	points = 1	
No	points = 0	**Score: 0**
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for S 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

S 4.0 Does the site have the potential to reduce flooding and erosion?		
S 4.1 What are the characteristics of the plants that reduce the velocity of surface flows during storms?		
Dense, uncut, rigid plants cover >90% of the wetland area	points = 1	
All other conditions	points = 0	**Score: 1**
	Total for S 4:	**1**

Rating of Site Potential [X] **1 = M** [ ] **0 = L** *Record the rating on the first page*

S 5.0 Does the landscape have the potential to support the hydrologic functions of the site?		
S 5.1 Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
	Total for S 5:	**1**

Rating of Landscape Potential [X] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W15

S 6.0 Are the hydrologic functions provided by the site valuable to society?		
S 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
There are no problems with flooding downstream of the wetland	points = 0	**Score: 2**
S 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for S 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W15

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [x] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 2**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [x] Permanently flooded or inundated
- [ ] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [x] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 2**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W15

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 3**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [✓] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 3**

Total for H 1: 11

Rating of Site Potential [ ] **15-18 = H** [X] **7-14 = M** [ ] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 0**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W15

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**3**

Rating of Landscape Potential [ ] **4-6 = H** [X] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [✓] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W15

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W15

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W15

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W15

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

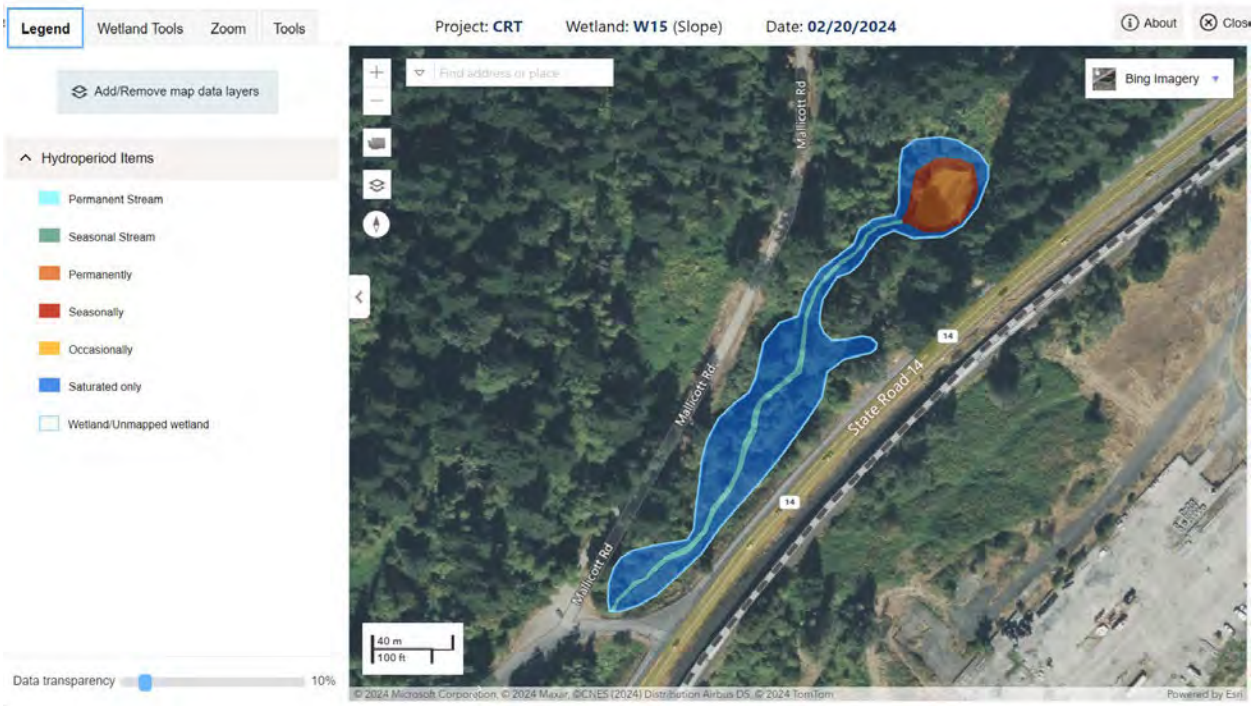

Figure 2: Hydroperiods

Figure 3: Plant Cover of Dense and Rigid Trees, Shrubs, and Herbaceous Plants

Figure 3: Boundary of area within 150 feet of the wetland.

Figure 5: 1km polygon.

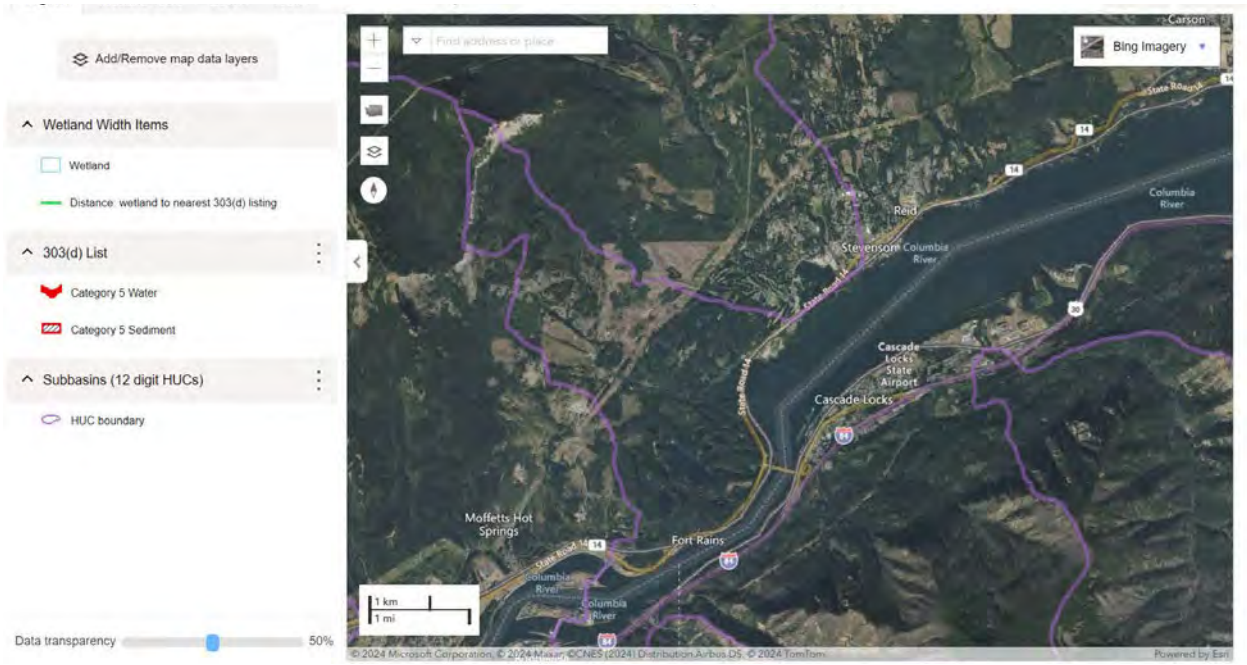

Figure 6: 303(d) listed waters in basin.

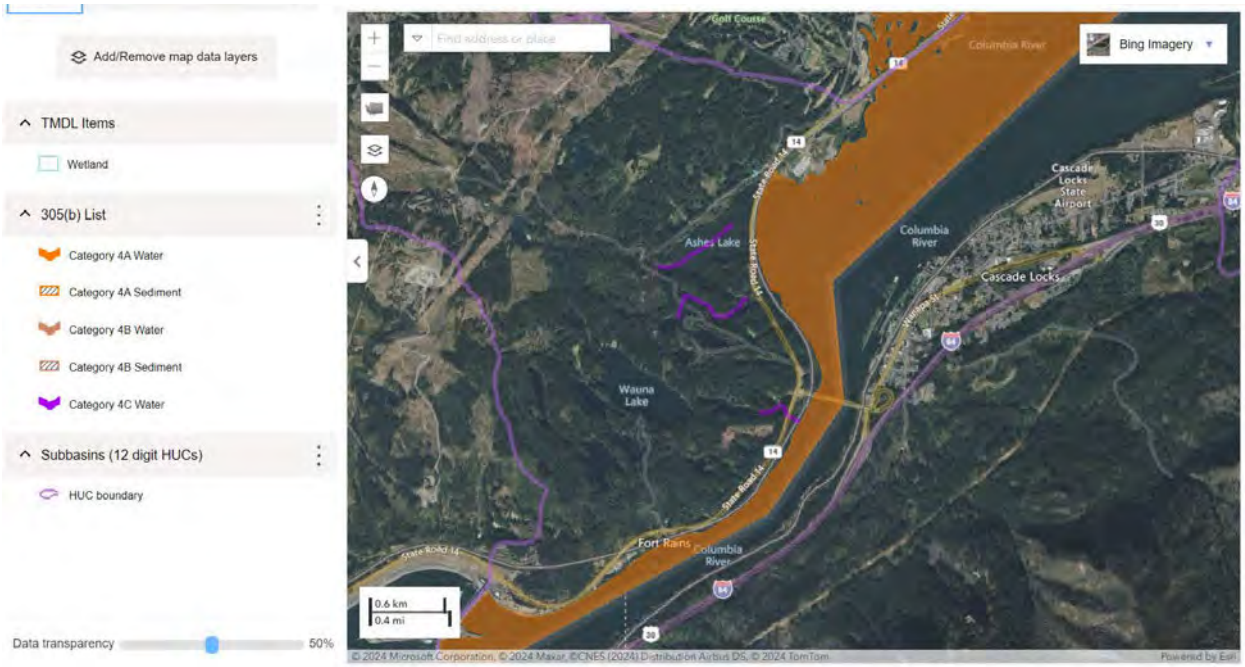

Figure 7: TMDLs for WRIA in which wetland is found.

Wetland name or number: W16

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W16 **Date of site visit:** 11/10/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category III**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[ ] **Category II** - Total score = 20 - 22

[X] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**L**	**L**	
Landscape Potential	**M**	**H**	**M**	
Value	**H**	**H**	**M**	**Total**
Score Based on Ratings	**7**	**7**	**5**	**19**

Score for each function based on three ratings
(order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W16

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	3
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	4
Map of the contributing basin	D 4.3, D 5.3	5
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	6
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	7
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Wetland name or number: W16

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 0**
	Total for D 1:	**7**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W16

D 2.5 What are the other sources of pollutants coming into the wetland?	
Total for D 2:	**2**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 0**

Wetland name or number: W16

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**5**

Rating of Site Potential [ ] **12-16 = H** [ ] **6-11 = M** [X] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 1**
	Total for D 5:	**3**

Rating of Landscape Potential [X] **3 = H** [ ] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W16

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [ ] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 0**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W16

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 0**

H 1.5 What are the special habitat features in the wetland?

- [ ] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [ ] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score:**

Total for H 1: **2**

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 0**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W16

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**3**

Rating of Landscape Potential [ ] **4-6 = H** [X] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 1**
	Total for H 3:	**1**

Rating of Value [ ] **2 = H** [X] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W16

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal
☐ The wetland is vegetated
☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.
☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland
☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W16

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3
No - Not a Bog Wetland **Result:**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W16

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland **Result: Not a Coastal Lagoon Wetland**

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon **Result:**

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland **Result: Not an Interdunal Wetland**

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4 **Result:**

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland **Result:**

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland **Result:**

Wetland name or number: W16

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

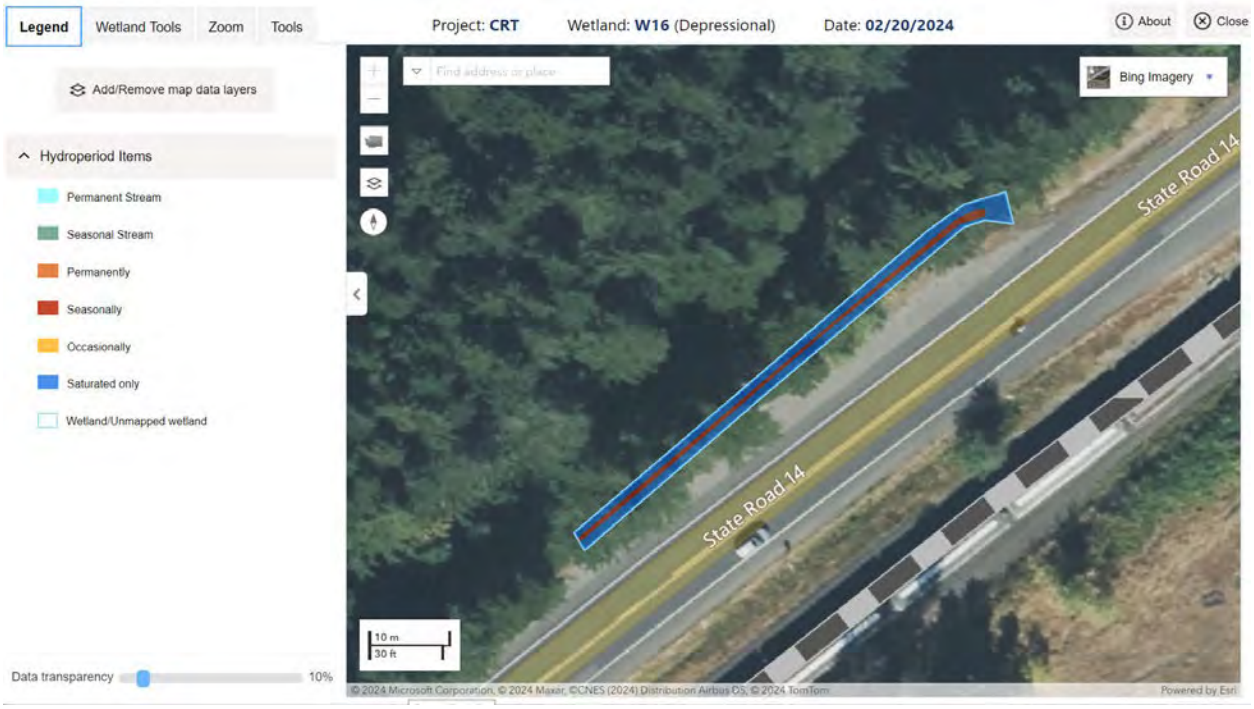

Figure 2: Hydroperiods

Figure 3: Outlet

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

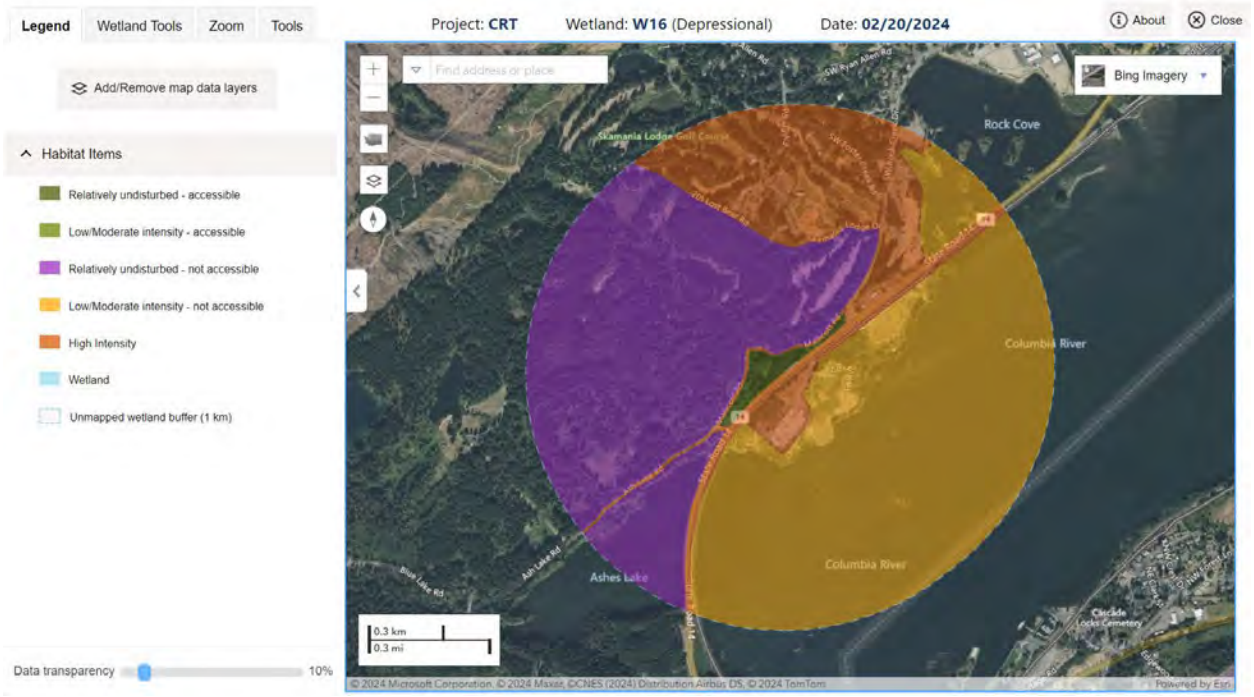

Figure 6: 1km polygon.

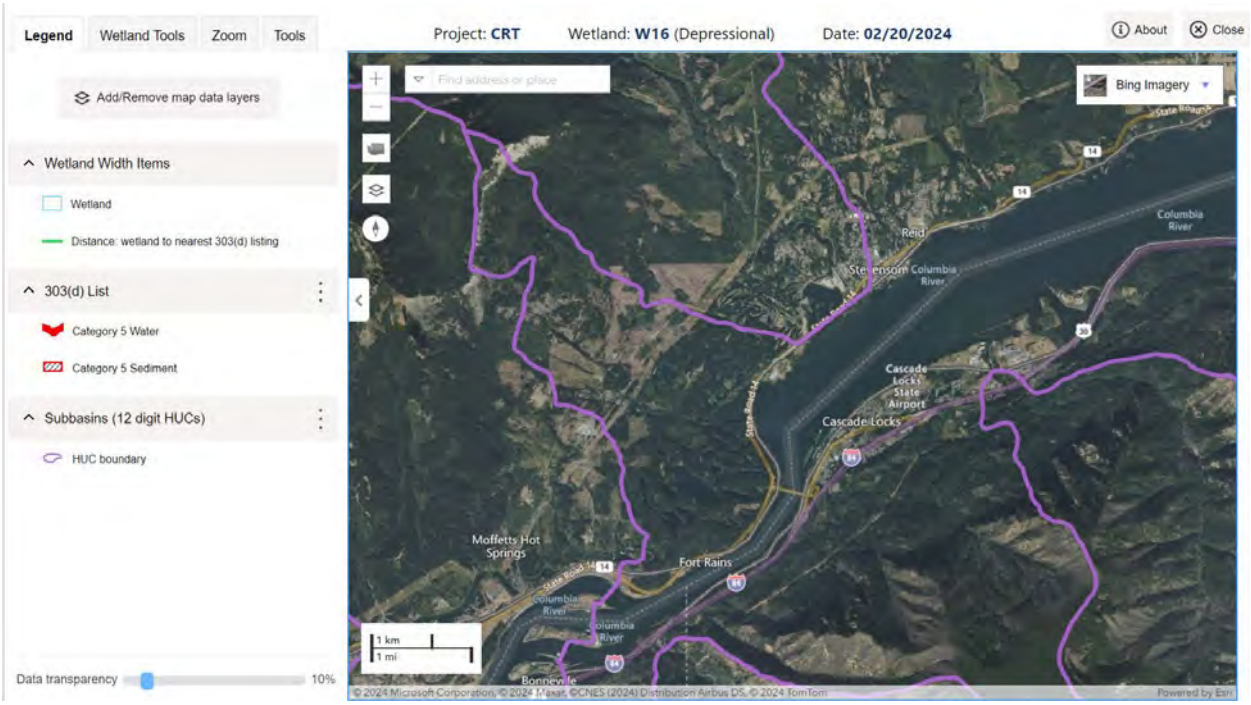

Figure 7: 303(d) listed waters in basin.

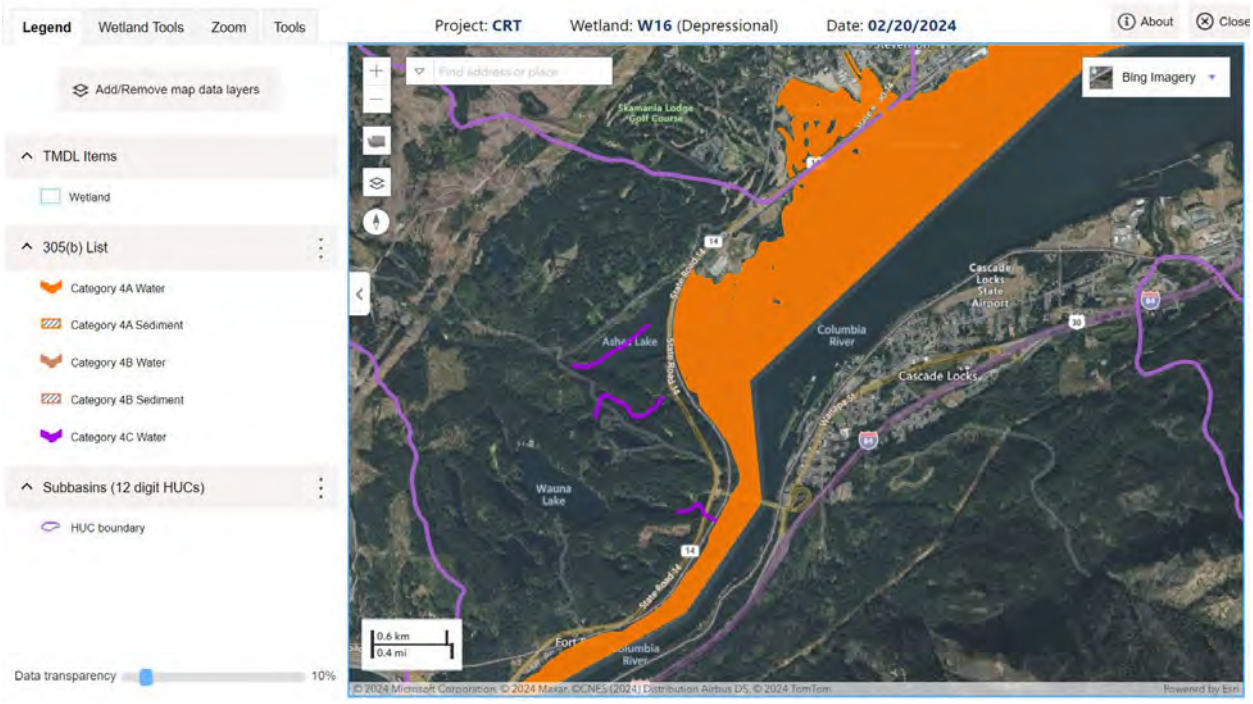

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W17

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W17 **Date of site visit:** 11/10/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category III**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[ ] **Category II** - Total score = 20 - 22

[X] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**L**	
Landscape Potential	**M**	**M**	**M**	
Value	**H**	**H**	**L**	**Total**
Score Based on Ratings	**7**	**7**	**4**	**18**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W17

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Wetland name or number: W17

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 2**
	Total for D 1:	**9**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W17

D 2.5 What are the other sources of pollutants coming into the wetland?		
	Total for D 2:	**2**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 3**

Wetland name or number: W17

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**8**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**2**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W17

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 1**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W17

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 1**

H 1.5 What are the special habitat features in the wetland?

- [ ] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [ ] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score:**

Total for H 1: **4**

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 0**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W17

H 2.3 What is the land use intensity in the 1km polygon?		
50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**3**

Rating of Landscape Potential [ ] **4-6 = H** [X] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [ ] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [ ] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score:**
	Total for H 3:	**0**

Rating of Value [ ] **2 = H** [ ] **1 = M** [X] **0 = L** *Record the rating on the first page*

Wetland name or number: W17

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland **Result: Not an Estuarine Wetland**

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3 **Result:**

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland **Result:**

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2 **Result: Go to SC 2.2**

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value **Result:**

Wetland name or number: W17

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W17

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland

Result: Not a Coastal Lagoon Wetland

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon

Result:

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland

Result: Not an Interdunal Wetland

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4

Result:

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland

Result:

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland

Result:

Wetland name or number: W17

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Outlet

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

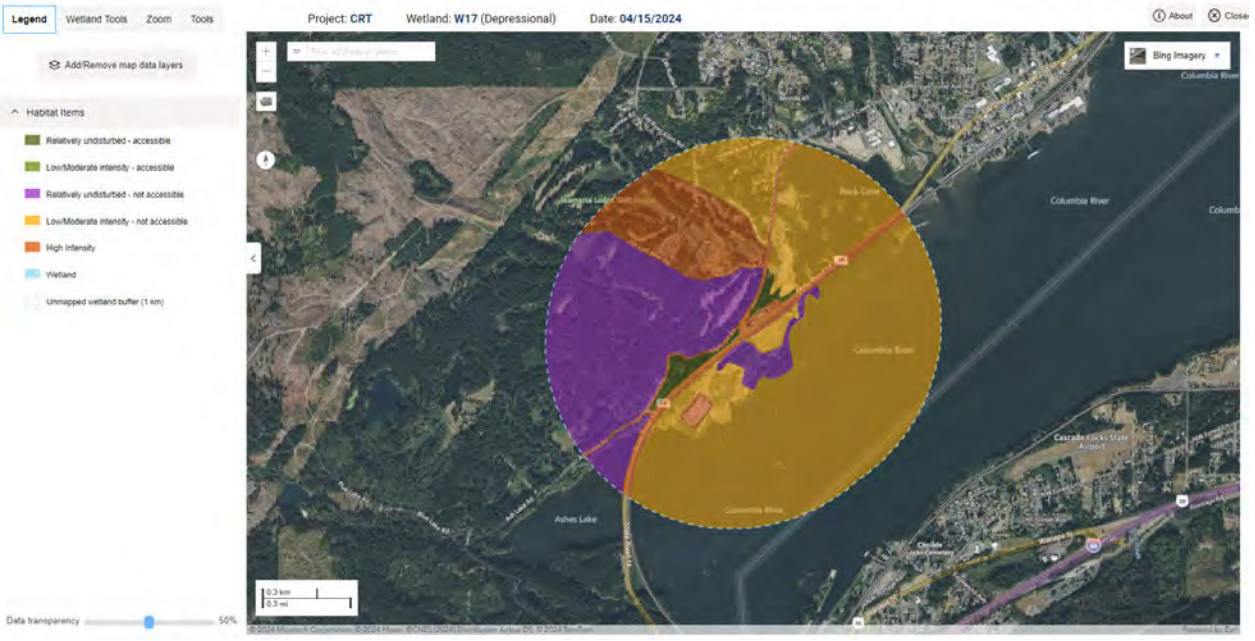

Figure 6: 1km polygon.

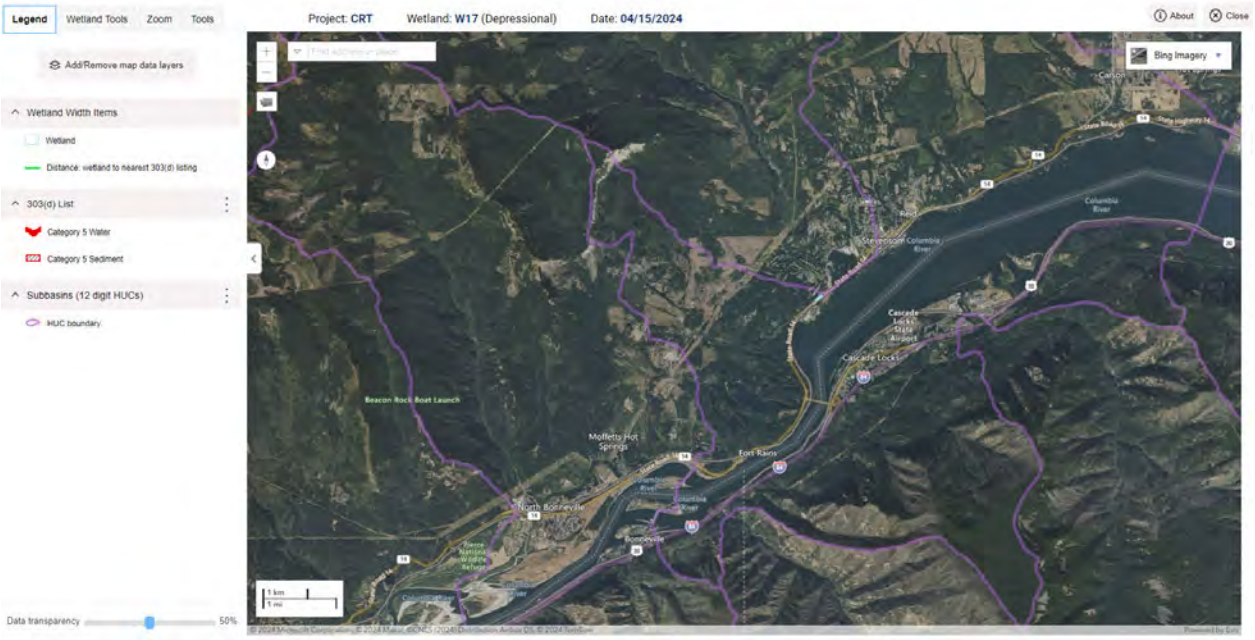

Figure 7: 303(d) listed waters in basin.

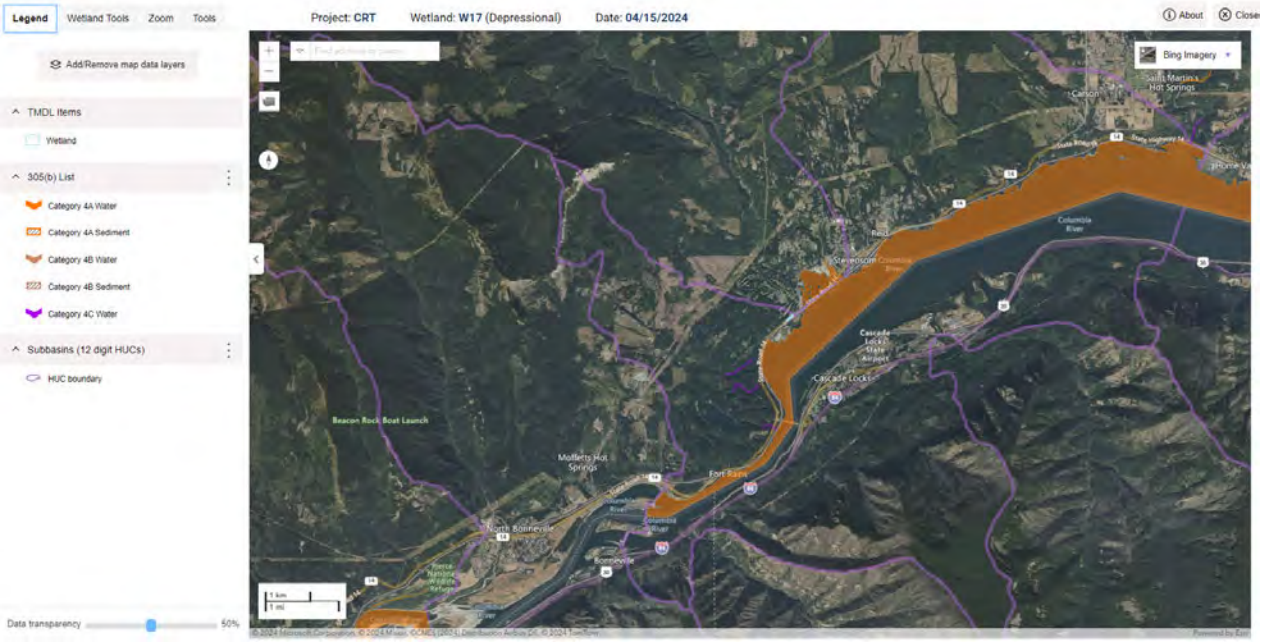

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W18

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W18 **Date of site visit:** 11/10/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category II**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[X] **Category II** - Total score = 20 - 22

[ ] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**M**	**M**	
Landscape Potential	**M**	**H**	**M**	
Value	**H**	**H**	**H**	**Total**
Score Based on Ratings	**7**	**8**	**7**	**22**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W18

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Wetland name or number: W18

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**
D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?		
Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**
D 1.3 What are the characteristics and distribution of persistent plants?		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**
D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?		
Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 2**
	Total for D 1:	**9**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 2.3 Are there septic systems within 250ft of the wetland?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?		
Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W18

D 2.5 What are the other sources of pollutants coming into the wetland?	
Total for D 2:	**2**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
Total for D 3:		**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 3**

Wetland name or number: W18

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**8**

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 1**
	Total for D 5:	**3**

Rating of Landscape Potential [X] **3 = H** [ ] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W18

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [x] Scrub-shrub
- [x] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 2**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 1**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 1**

Wetland name or number: W18

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 3**

H 1.5 What are the special habitat features in the wetland?

- [✓] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [✓] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score: 2**

Total for H 1: 9

Rating of Site Potential [ ] **15-18 = H** [X] **7-14 = M** [ ] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 0**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W18

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**3**

Rating of Landscape Potential [ ] **4-6 = H** [X] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [✓] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 2**
	Total for H 3:	**2**

Rating of Value [X] **2 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W18

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W18

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3

No - Not a Bog Wetland **Result: Not a Bog Wetland**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

☐ Old-growth forests
☐ Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W18

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland

Result: Not a Coastal Lagoon Wetland

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon

Result:

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland

Result: Not an Interdunal Wetland

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4

Result:

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland

Result:

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland

Result:

Wetland name or number: W18

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

Figure 1: Cowardin classes.

Figure 2: Hydroperiods

Figure 3: Outlet

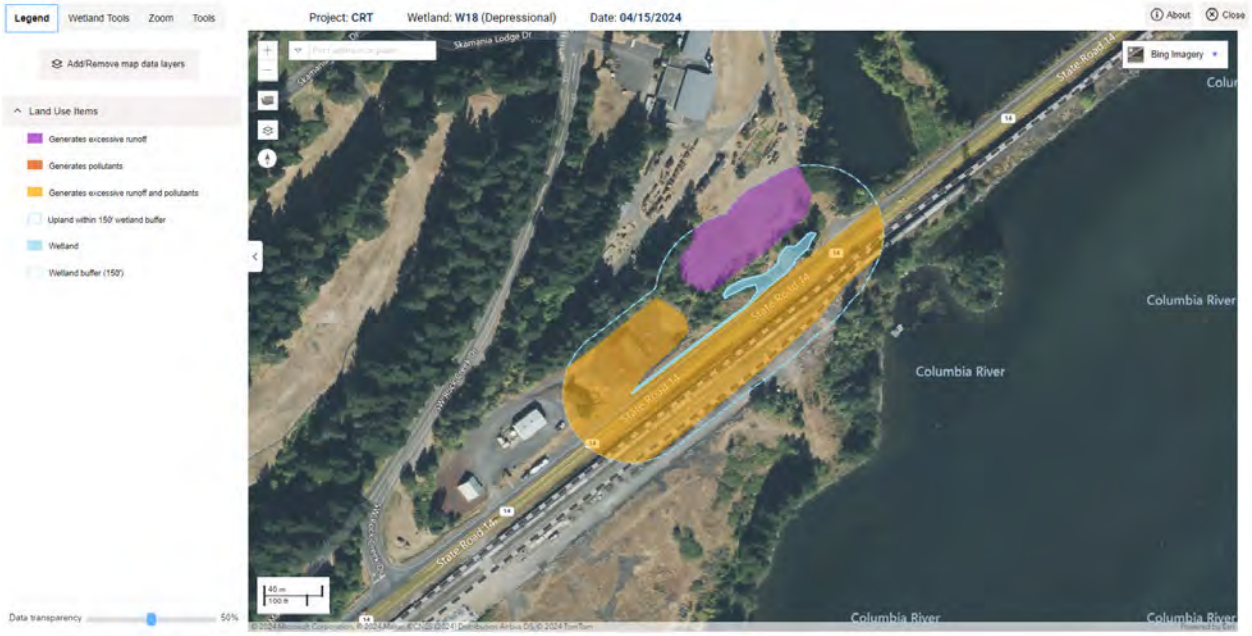

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

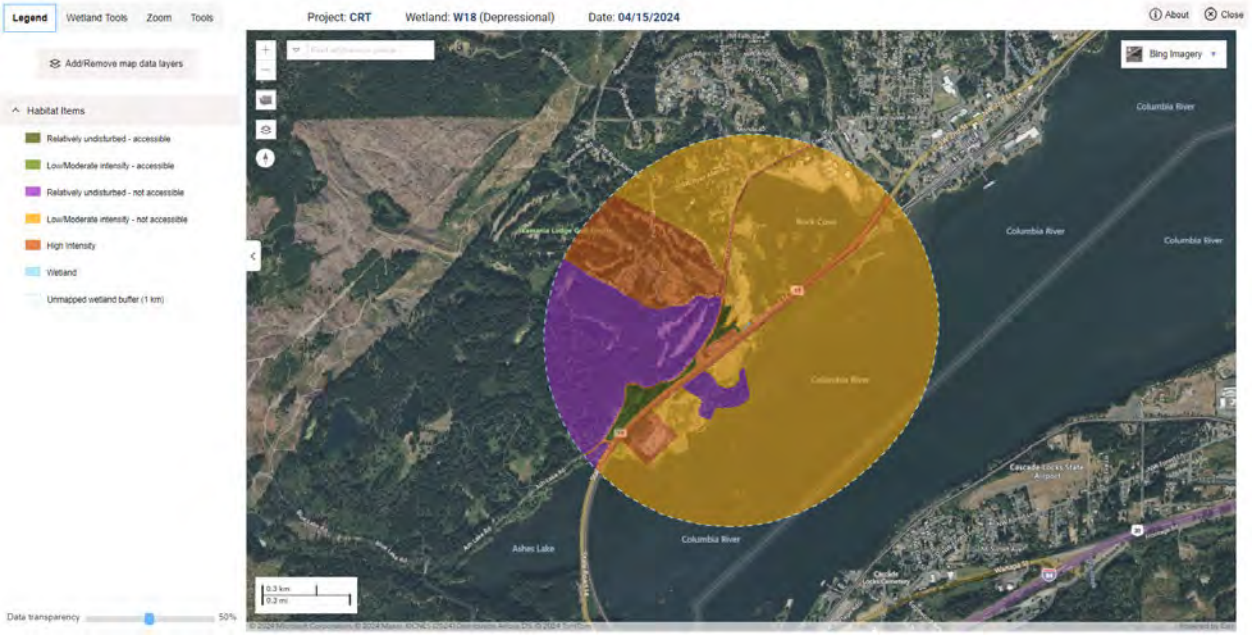

Figure 6: 1km polygon.

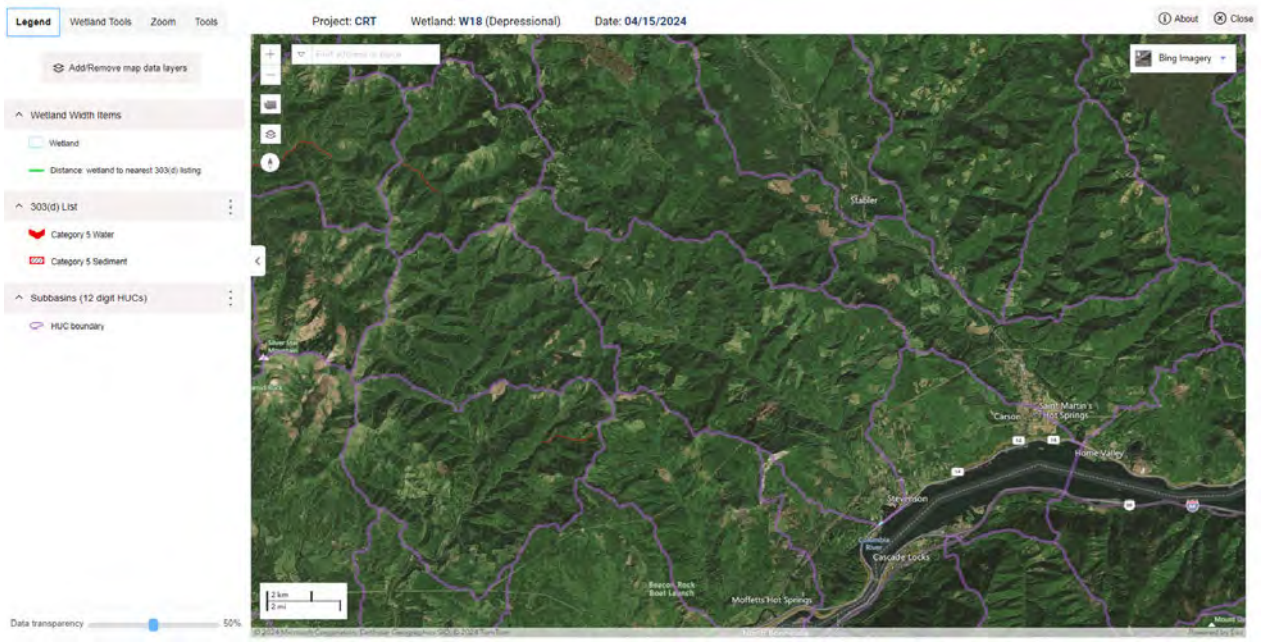

Figure 7: 303(d) listed waters in basin.

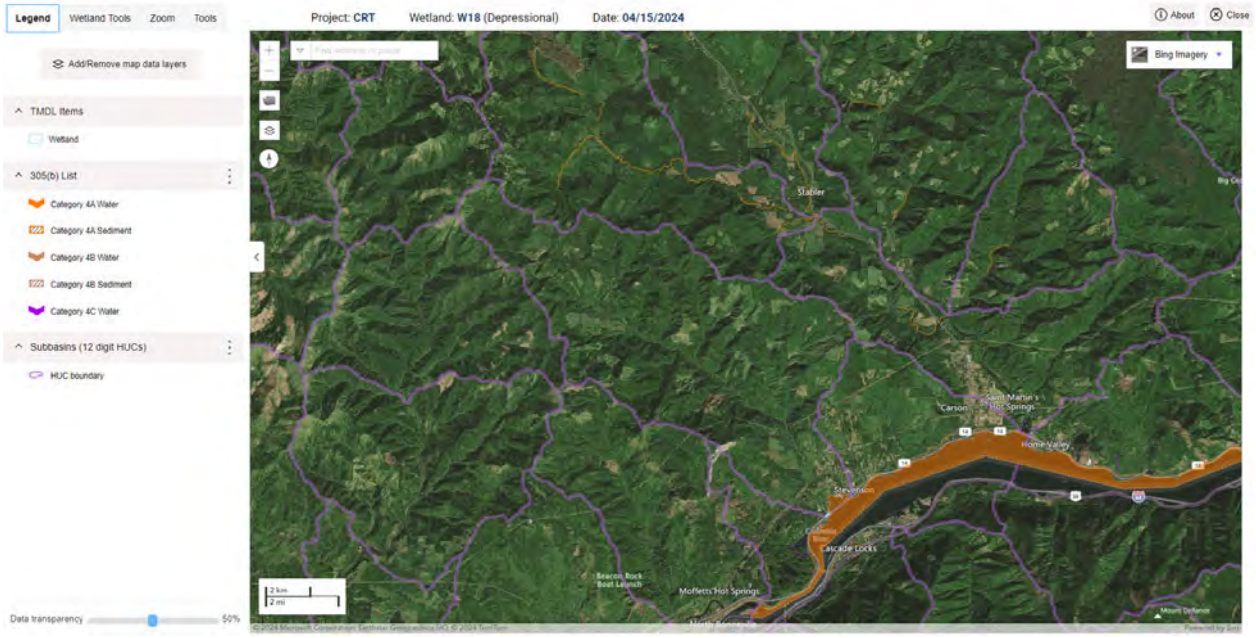

Figure 8: TMDLs for WRIA in which wetland is found.

Wetland name or number: W19

RATING SUMMARY - Western Washington

Name of wetland (or ID#): W19 **Date of site visit:** 11/08/2023

Rated By: Bryan Darby, Jen Maze **Trained by Ecology? Yes** [ ] **No** [X] **Date of Training:** N/A

HGM Class used for rating: Depressional

Wetland has multiple HGM classes? Yes [ ] **No** [X]

NOTE: Form is not complete without the figures requested *(figures can be combined).*

Source of base aerial photo/map:

OVERALL WETLAND CATEGORY: [**Category III**] (based on functions [X] or special characteristics [ ])

1. Category of wetland based on FUNCTIONS

[ ] **Category I** - Total score = 23 - 27

[ ] **Category II** - Total score = 20 - 22

[X] **Category III** - Total score = 16 - 19

[ ] **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
Site Potential	**M**	**L**	**L**	
Landscape Potential	**M**	**M**	**H**	
Value	**H**	**H**	**M**	**Total**
Score Based on Ratings	**7**	**6**	**6**	**19**

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	
Wetland of High Conservation Value	
Bog	
Forested	
Coastal Lagoon	
Interdunal	
None of the above	**Not Applicable**

Wetland name or number: W19

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1km Polygon: Area that extends 1km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Wetland name or number: W19

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0 Does the site have the potential to improve water quality?

D 1.1 What are the characteristics of surface water outflows from the wetland?

Wetland has no surface water outlet.	points = 3	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	**Score: 2**

D 1.2 Is the soil 2 in. below the surface a true clay or organic soil?

Mapped as true clay or organic (muck or peat)	points = 4	
Soil texture identified as clay or organic in field	points = 4	
Soil texture identified as clay or organic by laboratory test	points = 4	
None of the above	points = 0	**Score: 0**

D 1.3 What are the characteristics and distribution of persistent plants?

Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 50% of area	points = 3	
Wetland has persistent, ungrazed plants > 10% of area	points = 1	
Wetland has persistent, ungrazed plants < 10% of area	points = 0	**Score: 5**

D 1.4 What are the characteristics of seasonal ponding or inundation in the wetland area?

Area seasonally ponded is > 50% total area of wetland	points = 4	
Area seasonally ponded is equal to or > 25% total area of wetland	points = 2	
Area seasonally ponded is < 25% total area of wetland	points = 0	**Score: 0**

Total for D 1: 7

Rating of Site Potential [ ] **12-16 = H** [X] **6-11 = M** [ ] **0-5 = L** *Record the rating on the first page*

D 2.0 Does the landscape have the potential to support the water quality function of the site?

D 2.1 Does the wetland unit receive stormwater discharges?

Yes	points = 1	
No	points = 0	**Score: 1**

D 2.2 Is >10% of the area within 150ft of the wetland in land uses that generate pollutants in surface runoff?

Yes	points = 1	
No	points = 0	**Score: 1**

D 2.3 Are there septic systems within 250ft of the wetland?

Yes	points = 1	
No	points = 0	**Score: 0**

D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?

Yes	points = 1	
No	points = 0	**Score: 0**

Wetland name or number: W19

D 2.5 What are the other sources of pollutants coming into the wetland?		
	Total for D 2:	**2**

Rating of Landscape Potential [ ] **3-4 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.2 Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?		
Yes	points = 1	
No	points = 0	**Score: 0**
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality?		
Yes	points = 2	
No	points = 0	**Score: 2**
	Total for D 3:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradtion

D 4.0 Does the site have the potential to reduce flooding and erosion?		
D 4.1 What are the characteristics of surface water outflows from the wetland?		
Wetland has no surface water outlet.	points = 4	
Wetland has an intermittently flowing, or highly constricted, outlet.	points = 2	
Wetland is a flat depression whose outlet is a permanently flowing ditch.	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	**Score: 2**
D 4.2 What is the depth of storage during the wet periods?		
Marks of ponding are 3ft or more above the surface or bottom of the outlet.	points = 7	
Marks of ponding are between 2ft to <3ft from the surface or bottom of the outlet.	points = 5	
Marks of ponding are at least 0.5ft to <2ft from the surface or the bottom of the outlet.	points = 3	
The wetland is a "headwater" wetland.	points = 3	
The wetland is flat but has small depressions on the surface that trap water.	points = 1	
Marks of ponding are less than 0.5ft (6in).	points = 0	**Score: 0**

Wetland name or number: W19

D 4.3 What is the contribution of the wetland to storage in the watershed?		
The area of the basin is less than 10 times the area of the unit	points = 5	
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
Entire wetland is in the Flats class	points = 5	**Score: 3**
	Total for D 4:	**5**

Rating of Site Potential [ ] **12-16 = H** [ ] **6-11 = M** [X] **0-5 = L** *Record the rating on the first page*

D 5.0 Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1 Does the wetland unit receive stormwater discharges?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.2 Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		
Yes	points = 1	
No	points = 0	**Score: 1**
D 5.3 Is more than 25% of the contributing basin of the wetland covered with intensive human land uses?		
Yes	points = 1	
No	points = 0	**Score: 0**
	Total for D 5:	**2**

Rating of Landscape Potential [ ] **3 = H** [X] **1-2 = M** [ ] **0 = L** *Record the rating on the first page*

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the wetland in a landscape that has flooding problems?		
Flooding occurs in a sub-basin that is immediately down-gradient of the wetland.	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
Flooding from groundwater is an issue in the basin.	points = 1	
The existing or potential outflow from the wetland is so constrained that water cannot reach areas that flood.	points = 0	
There are no problems with flooding downstream of the wetland.	points = 0	**Score: 2**
D 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes	points = 2	
No	points = 0	**Score: 0**
	Total for D 6:	**2**

Rating of Value [X] **2-4 = H** [ ] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W19

HABITAT FUNCTIONS

These questions apply to wetlands of all HGM classes - Indicators that the site functions to provide important habitat

H 1.0 Does the wetland have the potential to provide habitat for many species?

H 1.1 What is the structure of the plant community?

- [ ] Aquatic Bed
- [x] Emergent
- [ ] Scrub-shrub
- [ ] Forested
- [ ] Multiple strata within the Forested class (canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)

4 structures or more	points = 4	
3 structures	points = 2	
2 structures	points = 1	
1 structure	points = 0	
No structures present	points = 0	**Score: 0**

H 1.2 What are the hydroperiods that meet the size thresholds in the wetland?

- [ ] Permanently flooded or inundated
- [x] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [x] Saturated only
- [ ] Permanently flowing stream or river in, or adjacent to, the wetland
- [x] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] Lake Fringe wetland
- [ ] Freshwater Tidal wetland

4 or more types present	points = 3	
3 types present or Lake Fringe / Freshwater Tidal Fringe	points = 2	
2 types present	points = 1	
1 type present	points = 0	
None present	points = 0	**Score: 2**

H 1.3 What is the richness of the plant species in the wetland?

>19 species	points = 2	
5-19 species	points = 1	
<5 species	points = 0	**Score: 0**

Wetland name or number: W19

H 1.4 What is the interspersion of habitats?

High	points = 3	
Moderate	points = 2	
Low	points = 1	
None	points = 0	**Score: 1**

H 1.5 What are the special habitat features in the wetland?

- [ ] Large, downed, woody debris within the wetland (>4in diameter and 6ft long).
- [ ] Standing snags (dbh >4in) within the wetland
- [ ] Undercut banks are present for at least 6.6ft (2m) and/or overhanging plants extend at least 3.3ft (1m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33ft (10m)
- [ ] Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)
- [ ] At least 0.25ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)
- [ ] Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)

6 habitats selected	points = 6	
5 habitats selected	points = 5	
4 habitats selected	points = 4	
3 habitats selected	points = 3	
2 habitats selected	points = 2	
1 habitat selected	points = 1	
No habitats selected	points = 0	**Score:**

Total for H 1: **3**

Rating of Site Potential [ ] **15-18 = H** [ ] **7-14 = M** [X] **0-6 = L** *Record the rating on the first page*

H 2.0 Does the landscape have the potential to support habitat functions of the site?

H 2.1 What is the percentage of accessible habitat within 1km of the wetland?

>33% of 1km Polygon	points = 3	
20-33% of 1km Polygon	points = 2	
10-19% of 1km Polygon	points = 1	
<10% of 1km Polygon	points = 0	**Score: 3**

H 2.2 What is the percentage of total habitat in a 1km polygon around the wetland?

Total habitat is >50% of the Polygon	points = 3	
Total habitat is 10-50% of the Polygon and in 1-3 patches	points = 2	
Total habitat is 10-50% of the Polygon and in >3 patches	points = 1	
Total habitat is <10% of the Polygon	points = 0	**Score: 3**

Wetland name or number: W19

H 2.3 What is the land use intensity in the 1km polygon?

50% of the Polygon is high intensity land use	points = -2	
<50% of the Polygon is high intensity land use	points = 0	**Score: 0**
	Total for H 2:	**6**

Rating of Landscape Potential [X] **4-6 = H** [ ] **1-3 = M** [ ] **0 = L** *Record the rating on the first page*

H 3.0 Is the habitat provided by the site valuable to society?

H 3.1 Does the site provide habitat for species valued in laws, regulations, or policies?

- [ ] Aspen Stands
- [✓] Biodiversity Areas and Corridors
- [ ] Herbaceous Balds
- [ ] Old-growth/Mature Forests
- [ ] Oregon White Oak
- [ ] Riparian
- [ ] Westside Prarie
- [ ] Fresh Deepwater
- [ ] Instream
- [ ] Nearshore (Coastal, Open Coast, Puget Sound)
- [ ] Caves
- [ ] Cliffs
- [✓] Snags and Logs
- [ ] Talus

The following criteria automatically score 2 points:

- [ ] The wetland provides habitat for Threatened or Endangered species
- [ ] The wetland is mapped as a location for an individual WDFW priority species
- [ ] The wetland is a Wetland of High Conservation Value
- [ ] The wetland has been categorized as an important habitat site in a local plan

The wetland has 3 or more WDFW priority habitats within 100m, or meets the criteria for societal value	points = 2	
The site has 1 or 2 WDFW priority habitats within 100m	points = 1	
The site does not meet any of the criteria for societal value	points = 0	**Score: 1**
	Total for H 3:	**1**

Rating of Value [ ] **2 = H** [X] **1 = M** [ ] **0 = L** *Record the rating on the first page*

Wetland name or number: W19

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

SC 1.0 Estuarine Wetlands

SC 1.1 Does the wetland meet all of the following criteria for Estuarine wetlands?

☐ The dominant water regime is tidal

☐ The wetland is vegetated

☐ The water salinity is greater than 0.5 ppt

Yes - Go to SC 1.2

No - Not an Estuarine Wetland

Result: Not an Estuarine Wetland

SC 1.2 Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?

Yes - Category I Estuarine Wetland

No - Go to SC 1.3

Result:

SC 1.3 Is the wetland unit at least 1ac in size and meets at least two of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species.

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland

☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.

Yes - Category I Estuarine Wetland

No - Category II Estuarine Wetland

Result:

SC 2.0 Wetlands of High Conservation Value

SC 2.1 Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?

Yes - Category I Wetland of High Conservation Value

No - Go to SC 2.2

Result: Go to SC 2.2

SC 2.2 Does the wetland have a rare plant species, rare plant community, or high-quality common plant community that may qualify the site as a WHCV?

Yes - Category I Wetland of High Conservation Value

No - Not a Wetland of High Conservation Value

Result: Not a Wetland of High Conservation Value

Wetland name or number: W19

SC 3.0 Bogs

SC 3.1 Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16in or more of the first 32in of the soil profile?

Yes - Go to SC 3.3
No - Go to SC 3.2 **Result: Go to SC 3.2**

SC 3.2 Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?

Yes - Go to SC 3.3
No - Not a Bog Wetland **Result:**

SC 3.3 Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least 30% cover of plant species listed in the table provided in the instructions?

Yes - Category I Bog Wetland
No - Go to SC 3.4 **Result:**

SC 3.4 Is an area with peats or mucks forested (>30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann Spruce, or western white pine AND any of the species (or combinations of species) listed in the table found in the instructions provide more than 30% of the cover under the canopy?

Yes - Category I Bog Wetland
No - Not a Bog Wetland **Result:**

SC 4.0 Forested Wetlands

SC 4.1 Does the wetland have at least 1 contiguous acre of forest that meets one of the following criteria?

- [ ] Old-growth forests
- [ ] Mature forests

Yes - Category I Forested Wetland

No - Not a Forested Wetland **Result: Not a Forested Wetland**

Wetland name or number: W19

SC 5.0 Wetlands in Coastal Lagoons

SC 5.1 Coastal Lagoons: Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or rocks

☐ The depression in which the wetland is located contains ponded water that is saline or brackish (>0.5 ppt) during most of the year in at least a portion of the open water area (measured near the bottom)

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes - Go to SC 5.2

No - Not a Coastal Lagoon Wetland

Result: Not a Coastal Lagoon Wetland

SC 5.2 Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species).

☐ At least 75% of the landward edge of the wetland has a 100ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ the wetland is larger than 0.10ac (4350 sqft)

Yes - Category I Coastal Lagoon

No - Category II Coastal Lagoon

Result:

SC 6.0 Interdunal Wetlands

SC 6.1 Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership WBUO)?

Yes - Go to SC 6.2

No - Not an Interdunal Wetland

Result: Not an Interdunal Wetland

SC 6.2 Is the wetland 1ac or larger in size, or a mosaic that is 1ac or larger in size?

Wetland is larger than 1ac in size - Go to SC 6.3

Wetland is a mosaic larger than 1ac is size - Category II Interdunal Wetland

No - Go to SC 6.4

Result:

SC 6.3 Does the wetland score 8 or 9 points for the habitat functions?

Yes - Category I Interdunal Wetland

No - Category II Interdunal Wetland

Result:

SC 6.4 Is the wetland unit between 0.1ac and 1ac, or in a mosaic of wetlands that is between 0.1ac and 1ac in size?

Yes - Category III Interdunal Wetland

No - Category IV Interdunal Wetland

Result:

Wetland name or number: W19

Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	**Final Category: Not Applicable**

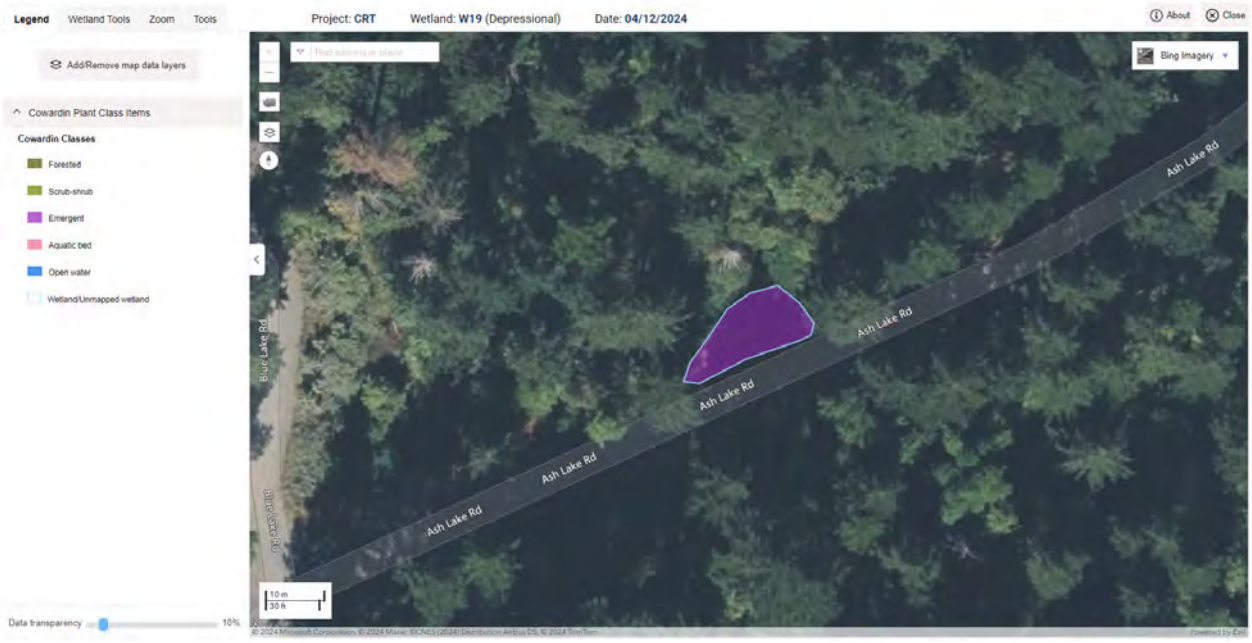

Figure 1: Cowardin classes.

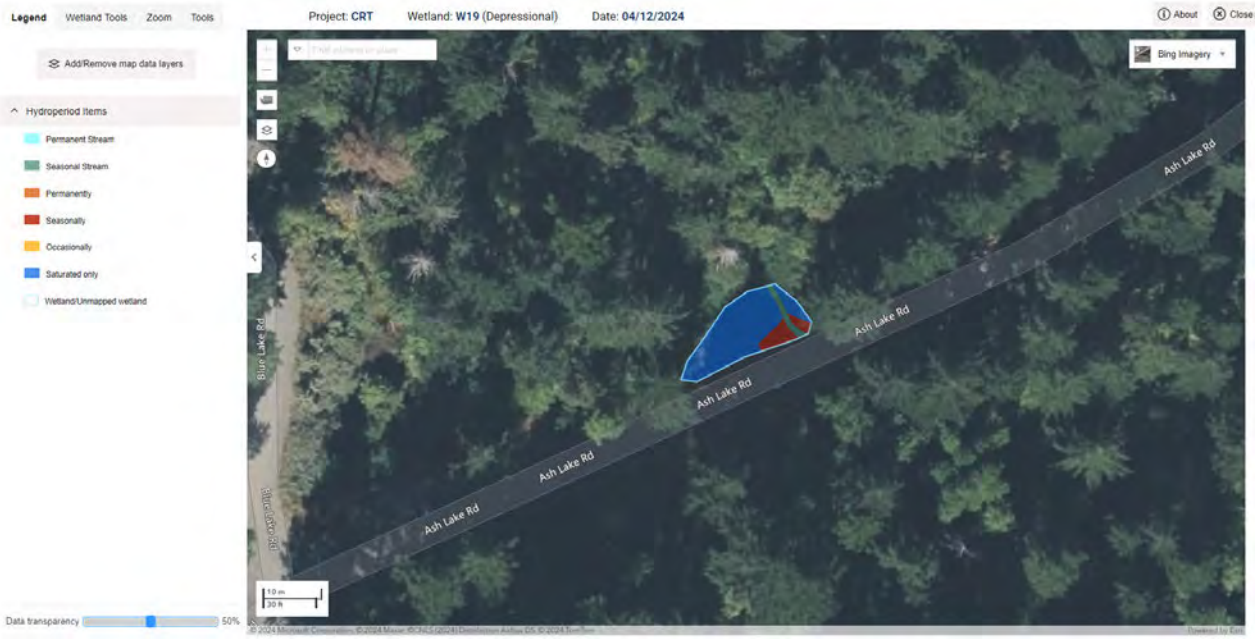

Figure 2: Hydroperiods

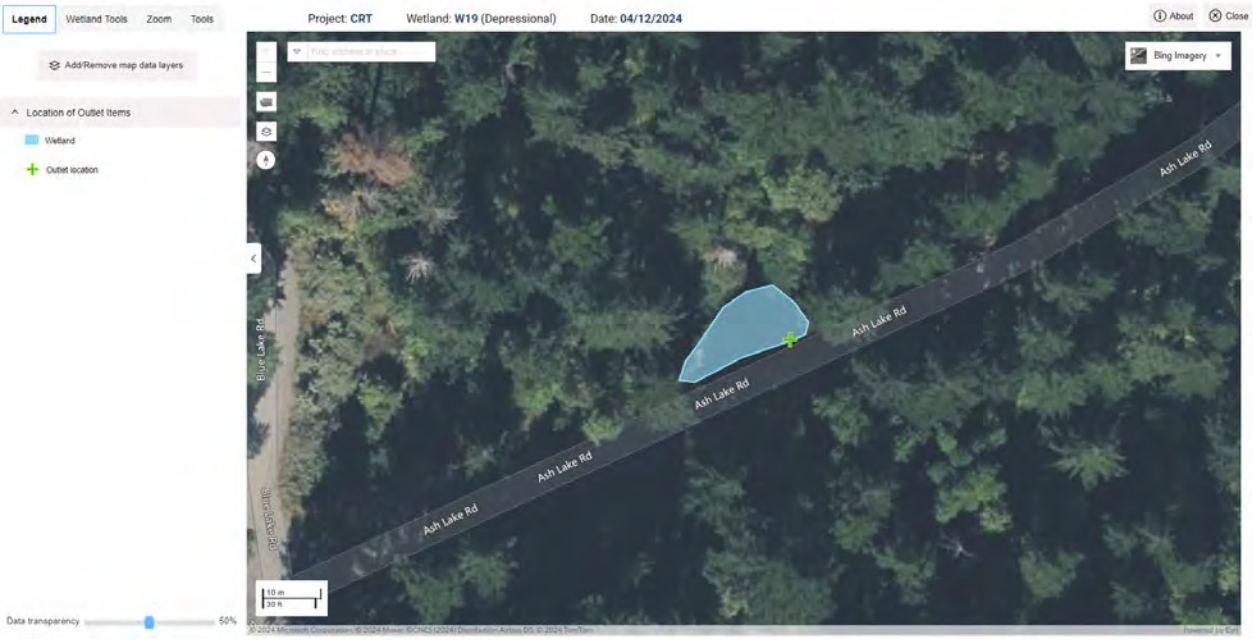

Figure 3: Outlet

Figure 4: Boundary of 150’

Figure 5: Contributing Basin

Figure 6: 1km polygon.

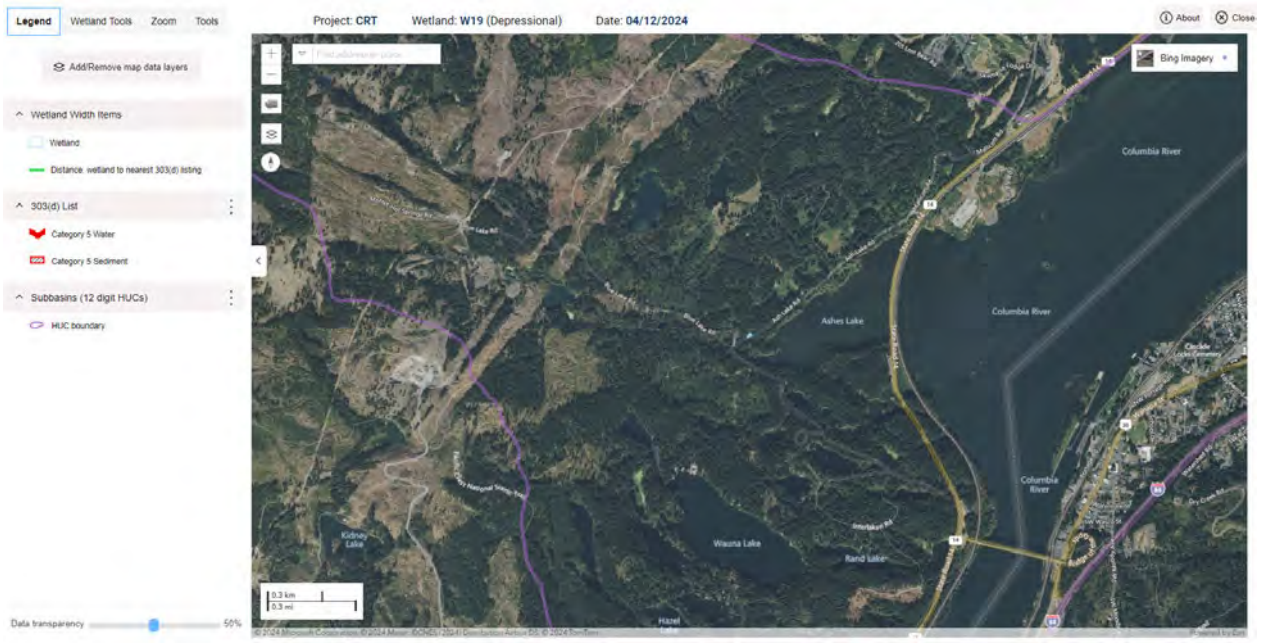

Figure 7: 303(d) listed waters in basin.

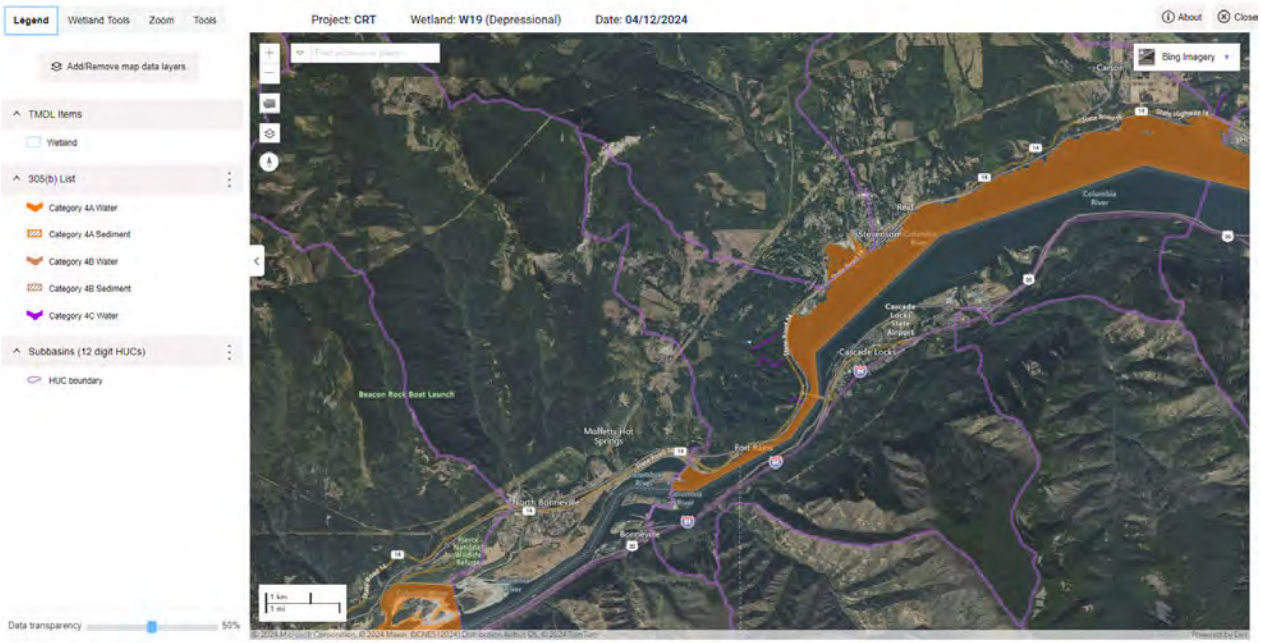

Figure 8: TMDLs for WRIA in which wetland is found.

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Appendix D. Site Visit Photos

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Photo 1 Date: 11/06/23 Direction: Northeast	Columbia River shoreline, south of survey area, near HDD Area 9 where the cable will placed back into the river below Bonneville Lock and Dam.

Photo 2a Date: 04/20/23 Direction: Northeast	Overview of Wetland 1. Occurs in a depression with hummocks and water channels and is forested at the wetland boundary.

Photo 2b	Overview of Wetland 1 upland boundary and buffer.
Date: 04/20/23	
Direction: West	

Photo 3a	Overview of Wetland 1 and Wetland 2 buffer from within paved parking lot proposed for HDD Area 9 below Bonneville Lock and Dam.
Date: 04/20/23	
Direction: West	

Photo 3b Date: 04/20/23 Direction: Northwest	Overview of Wetland 1 and Wetland 2 buffer near HDD Area 9 below Bonneville Lock and Dam.

Photo 4a Date: 11/06/23 Direction: Northeast	Overview of Wetland 2 and buffer. The wetland discharges to Stream 13 in the background.

Photo 4b	Upland boundary of Wetland 2, viewing wetland buffer.
Date: 11/06/23	
Direction: South	

Photo 5	Overview of Stream 13.
Date: 11/06/23	
Direction: West	

Photo 6	Ditch 1, near Verification Plot 1 (VP-1).
Date: 11/06/23	
Direction: Northeast	

Photo 7	Overview of Ditch 2.
Date: 04/20/23	
Direction: Southwest	

Photo 8	Ditch 3, at Verification Plot 2 (VP-2).
Date: 11/06/23	
Direction: Northeast	

Photo 9	Stream 1, facing upstream. Headwaters originate upslope and outside survey area.
Date: 11/06/23	
Direction: West	

Photo 10 Date: 04/20/23 Direction: North	Stream 1, facing downstream. Low flow velocity and multiple channels prior to entering Wetland 4.

Photo 11 Date: 04/20/23 Direction: West	Wetland 3 and its buffer occur at a depression at the base of a small ravine.

Photo 12 Date: 04/20/23 Direction: Northeast	Southern portion of Wetland 4 and buffer adjacent to Ft. Cascades Drive.

Photo 13 Date: 04/20/23 Direction: Southwest	Northern portion of Wetland 4 and buffer adjacent to Ft. Cascades Drive. Discharge point to Stream 1.

Photo 14 Date: 04/20/23 Direction: Southwest	Verification Plot 3 (VP-3) documenting upland conditions in depressional area north of Ft. Cascades Drive.

Photo 15 Date: 04/20/23 Direction: Northwest	Ditch 4, no outlet observed, water infiltrates onsite.

Photo 16	The buffer to Wetland 5 occurs within survey area.
Date: 11/07/23	
Direction: North	

Photo 17	The buffer to Wetland 6 occurs in the survey area.
Date: 04/20/23	
Direction: North	

Photo 18 Date: 04/20/23 Direction: Northwest	Wetland 7 is a small depressional wetland with no outlet located north of SR-14.

Photo 19 Google Maps Image Dated May 2023 Direction: North	Wetland 8 is a small depressional wetland with no outlet located north of SR-14.

Photo 20 Date 11/07/23 Direction: Northwest	Verification Plot 4 (VP-4) documenting upland conditions in a suspect area at a shallow roadside ditch north of SR-14.

Photo 21 Date: 04/20/23 Direction: Northeast	Stream 2 discharges to a large culvert beneath SR-14 that drains to the Columbia River.

Photo 22 Date: 04/20/23 Direction: Southeast	Ditch 5 drains to Stream 3 and continues southwest to a culvert that discharges to the Columbia River. The ditch, stream channel and stream buffer have been recently altered by human disturbance.

Photo 23a Date: 04/20/23 Direction: Southwest	Overview of Stream 3; occurs adjacent to SR-14 and Wetland 9.

Photo 23b Date: 04/20/23 Direction: Northeast	Overview of Ditch 5, recent utility-related soil and vegetation disturbance.

Photo 24 Date: 04/20/23 Direction: Southwest	Overview of the eastern boundary and buffer of Wetland 9 within recently disturbed area. Stream 3 in the foreground; forested portion of Wetland 9 in the background.

Photo 25 Date: 04/20/23 Direction: Northeast	Overview of the western boundary of Wetland 9. Depressional forested wetland.

Photo 26 Date: 04/20/23 Direction: North	Overview of impoundment of Ice House Lake 1 adjacent to SR-14. The OHWM of the lake borders the survey area.

Photo 27 Date: 04/20/23 Direction: South	Culvert on western boundary of Ice House Lake 1; discharges to Columbia River via open stream channel located outside survey area.

Photo 28 Date: 04/21/23 Direction: Northwest	Overview of impoundment of Ice House Lake 2 by Ash Lake Road.

Photo 29	Ice House Lake 2 drains to two culverts and then to the Columbia River via open stream channels located outside survey area.
Date: 04/21/23	
Direction: Southeast	

Photo 30	Overview of Wecoma Lake impoundment by Ash Lake Road. Lake drains to a culvert on the east end of the lake; surface water connections located outside the survey area.
Date: 04/21/23	
Direction: West	

Photo 31a	Stream 4 looking upstream from Ash Lake Road. Intermittent stream drains to culvert beneath road to a series of ponds outside the survey area and then to Ashes Lake.
Date: 04/21/23	
Direction: Southwest	

Photo 31b	Perched culvert at Stream 4 discharge point to the north of Ash Lake Road.
Date: 04/21/23	
Direction: Northeast	

Photo 32 Date: 04/21/23 Direction: Northwest	Upstream portion of Stream 5 and buffer. Steep slopes in stream buffer.

Photo 33 Date: 11/07/23 Direction: Southeast	Downstream portion of Stream 5 and buffer. Mainly vegetated with invasives.

Photo 34 Date: 04/21/23 Direction: Northeast	Overview of Wetland 10, forested wetland north of Ash Lake Road.

Photo 35 Date: 04/21/23 Direction: Northwest	During periods of high water, Wetland 10 discharges via a culvert to an ephemeral drainage on the south side of Ash Lake Road and discharging to Ashes Lake.

Photo 36	Overview of Wetland 19, Stream 6 adjacent to the east.
Date: 11/07/23	
Direction: North	

Photo 37	Overview of Wetland 19 from upland plot. Small depressional area north of Ash Lake Road.
Date: 11/09/23	
Direction: East	

Photo 38 Date: 04/21/23 Direction: South	Overgrown culvert impounds Stream 6 causing flooding to adjacent depression and Wetland 19 during periods of high rainfall.

Photo 39 Date: 11/07/23 Direction: Southeast	Discharge point of Stream 6, south of Ash Lake Road.

Photo 40 Date: 11/09/23 Direction: Northwest	Wetland 11 occurs on the banks of Stream 7 and north of Ash Lake Road.

Photo 41 Date: 11/09/23 Direction: South	Discharge point of Stream 7 south of Ash Lake Road.

Photo 42 Date: 04/21/23 Direction: Northeast	Overview of Ditch 6 near discharge point to culvert under Ash Lake Road.

Photo 43 Date: 04/21/23 Direction: Northwest	Verification Plot 5 (VP-5) confirms upland conditions in depressional area north of Ash Lake Road.

Photo 44 Date: 04/21/23 Direction: Northwest	Overview of Stream 8 from north side of Ash Lake Road.

Photo 45 Date: 11/09/23 Direction: Northwest	Stream 8 is a high energy perennial stream that discharges to Ashes Lake. Understory buffer is mainly comprised of invasive Himalayan blackberry.

Photo 46	Wetland 12 drains to culvert beneath Ash Lake Road.
Date: 04/21/23	
Direction: Northwest	

Photo 47	Overview of Stream 9 channel and adjacent buffer looking toward Ash Lake Road.
Date: 11/09/23	
Direction: South	

Photo 48 Date: 04/21/23 Direction: Northwest	Overview of Wetland 13 where Stream 10 meets Ash Lake Road.

Photo 49 Date: 04/21/23 Direction: Northeast	Stream 10 discharges to a wetland north of Mallicott Road and out of the survey area; flow assumed to discharge to Ashes Lake.

Photo 50 Date: 11/10/23 Direction: Southwest	Overview of Wetland 14. Stream 11 occurs at toe of SR-14 road bed fill slope.

Photo 51 Date: 11/10/23 Direction: Northwest	Wetland 15 drains to Stream 11, discharging via a culvert under Ash Lake Road into Ashes Lake.

Photo 52	Ditch 7 is an ephemeral drainage north of SR-14.
Date: 11/10/23	
Direction: Southwest	

Photo 53	Drainage patterns where Ditch 7 discharges to upland area.
Date: 11/10/23	
Direction: Northwest	

Photo 54a	Wetland 16 occurs in a roadside ditch north of SR-14.
Date: 11/10/23	
Direction: Southwest	

Photo 54b	Wetland 16 was also observed in the spring and a high occurrence of American speedwell and mild water-pepper were noted, along with algal mats.
Date: 04/21/23	
Direction: North	

Photo 55 Date: 11/10/23 Direction: Northeast	Representative photo of vegetation species composition near headwaters of Wetland 17.

Photo 56 Date: 11/10/23 Direction: Southwest	Headwaters of Wetland 17 begin west of SW Rock Creek Drive.

Photo 57 Date: 11/10/23 Direction: Southwest	Representative photo of vegetation species composition in the downstream reach of Wetland 17.

Photo 58 Date: 11/10/23 Direction: Northeast	Long culvert and change in gradient between Wetland 17 and Wetland 18.

Photo 59 Date: 11/10/23 Direction: Northeast	Representative photo of plant community composition within upper portion of Wetland 18.

Photo 60 Date: 04/21/23 Direction: Southwest	Wetland 18 is located north of SR-14 and occurs for roughly 0.3 miles mainly confined to a roadside ditch. Vegetation within the wetland had been trimmed to the ground recently (April 2023).

Photo 61 Date: 11/10/23 Direction: Southeast	Representative photo of vegetation species composition within eastern portion of Wetland 18 (November 2023).

Photo 62 Date: 11/10/23 Direction: West	The northern boundary of Wetland 18 near the eastern end. The wetland plant species transition from emergent to shrub/scrub community.

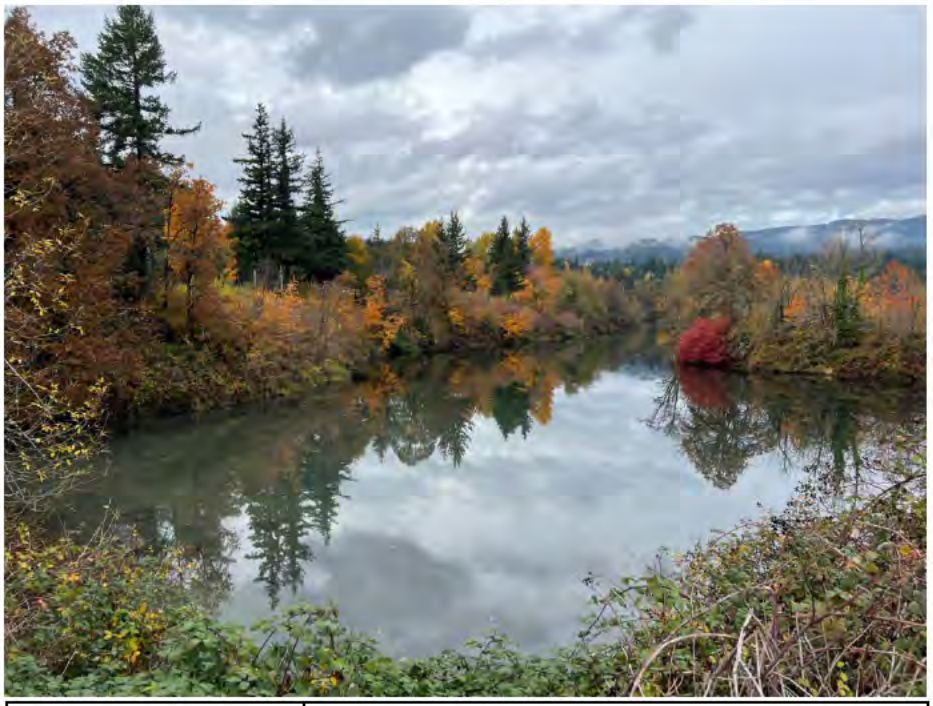

Photo 63 Date: 11/10/23 Direction: Northwest	Overview of Rock Cove, near discharge point from Wetland 18 and Stream 12.

Photo 64 Date: 04/21/23 Direction: Northwest	Overview of proposed landing site in Steveson, Washington. Location of Verification Plot 6 (VP-6).

Photo 65 Date: 11/10/23 Direction: Northeast	Proposed alternate landing site in Skamania County. Verification Plot 7 (VP-7) confirms upland conditions.

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Appendix E. Figures

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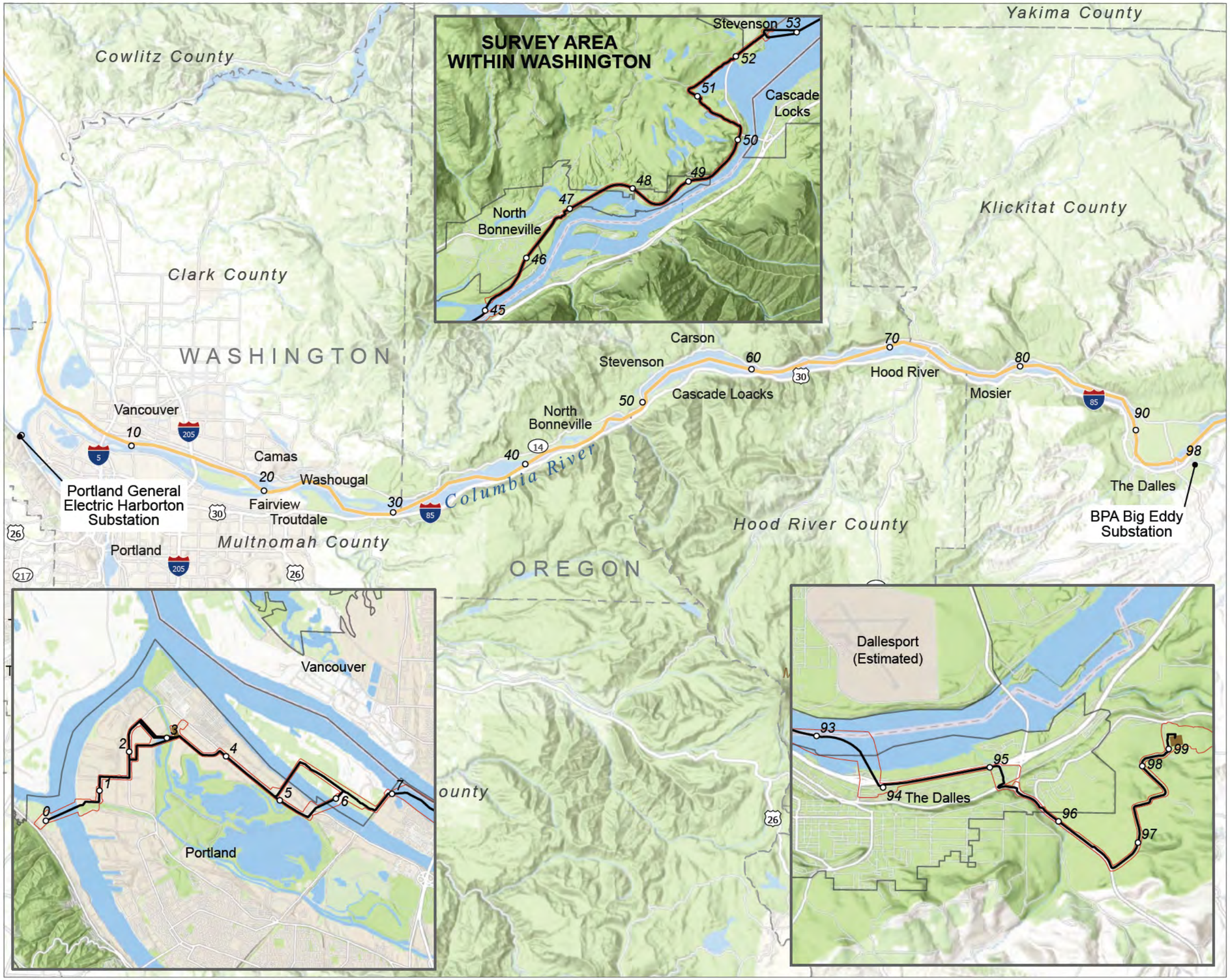
Figure 1. Project Overview



5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

River Miles (Miles)

Proposed Alignment

County Boundary

State Boundary

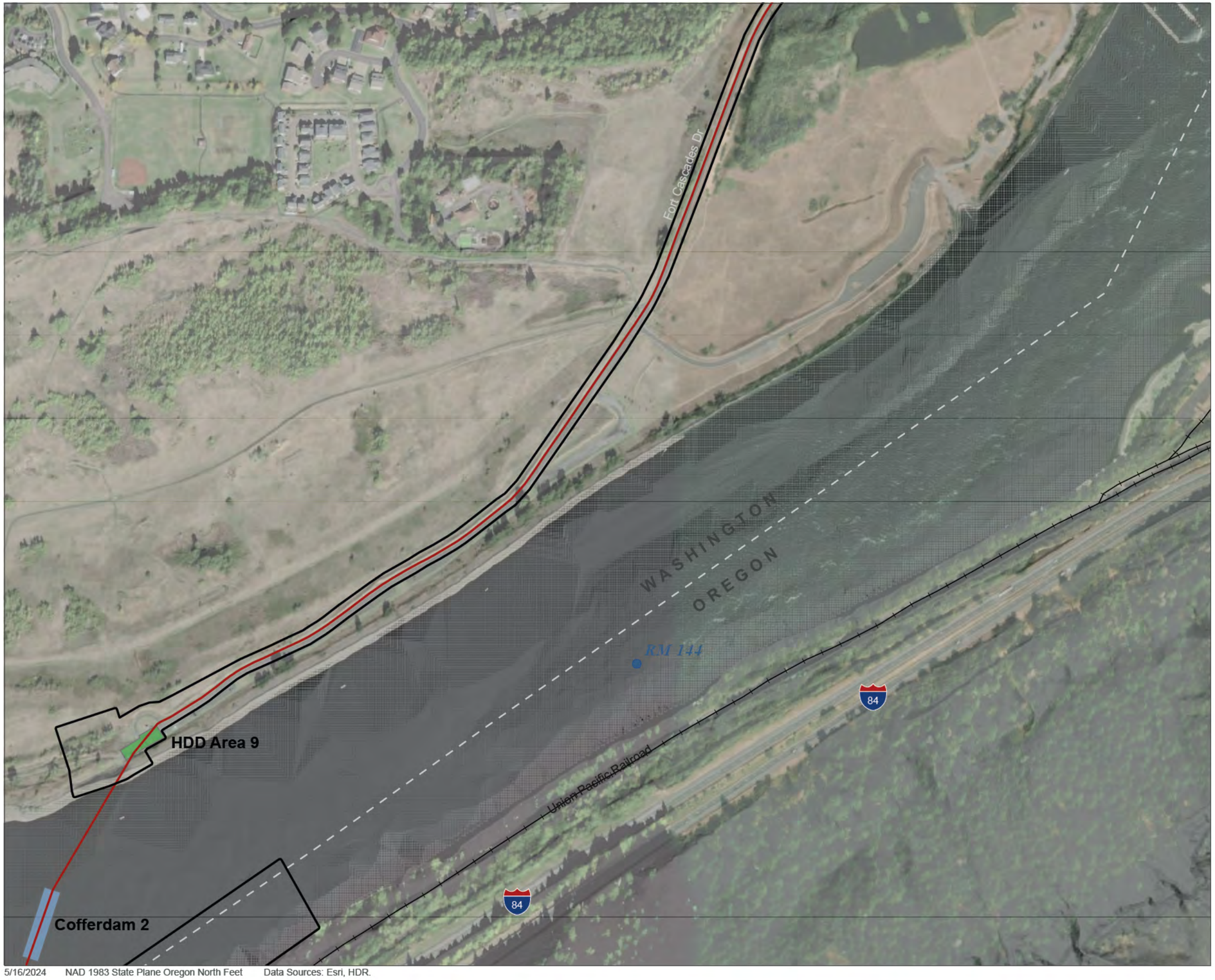
Wetland and Waters Survey Area

CASCADE RENEWABLE TRANSMISSION

0 10 mi

1:7,200,000

Figure 1. Overview/Survey Area
Page 1 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 29
USGS Quad Name:
Bonneville Dam



- USACE RIVER MILE
- PROPOSED ALIGNMENT
- TEMPORARY HORIZONTAL DIRECTIONAL DRILLING (HDD) AREA
- TEMPORARY 3-SIDED WET COFFERDAM
- WETLAND AND WATERS SURVEY AREA
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 1. Overview/Survey Area
Page 2 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 20, 21, 29
USGS Quad Name:
Bonneville Dam

PROPOSED ALIGNMENT

WETLAND AND WATERS SURVEY AREA

STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 1. Overview/Survey Area
Page 3 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 15, 16, 21
USGS Quad Name:
Bonneville Dam

PROPOSED ALIGNMENT

WETLAND AND WATERS SURVEY AREA

STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

Figure 1. Overview/Survey Area
Page 4 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 15, 22
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- TEMPORARY HORIZONTAL AUGER BORE (HAB)
- WETLAND AND WATERS SURVEY AREA
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

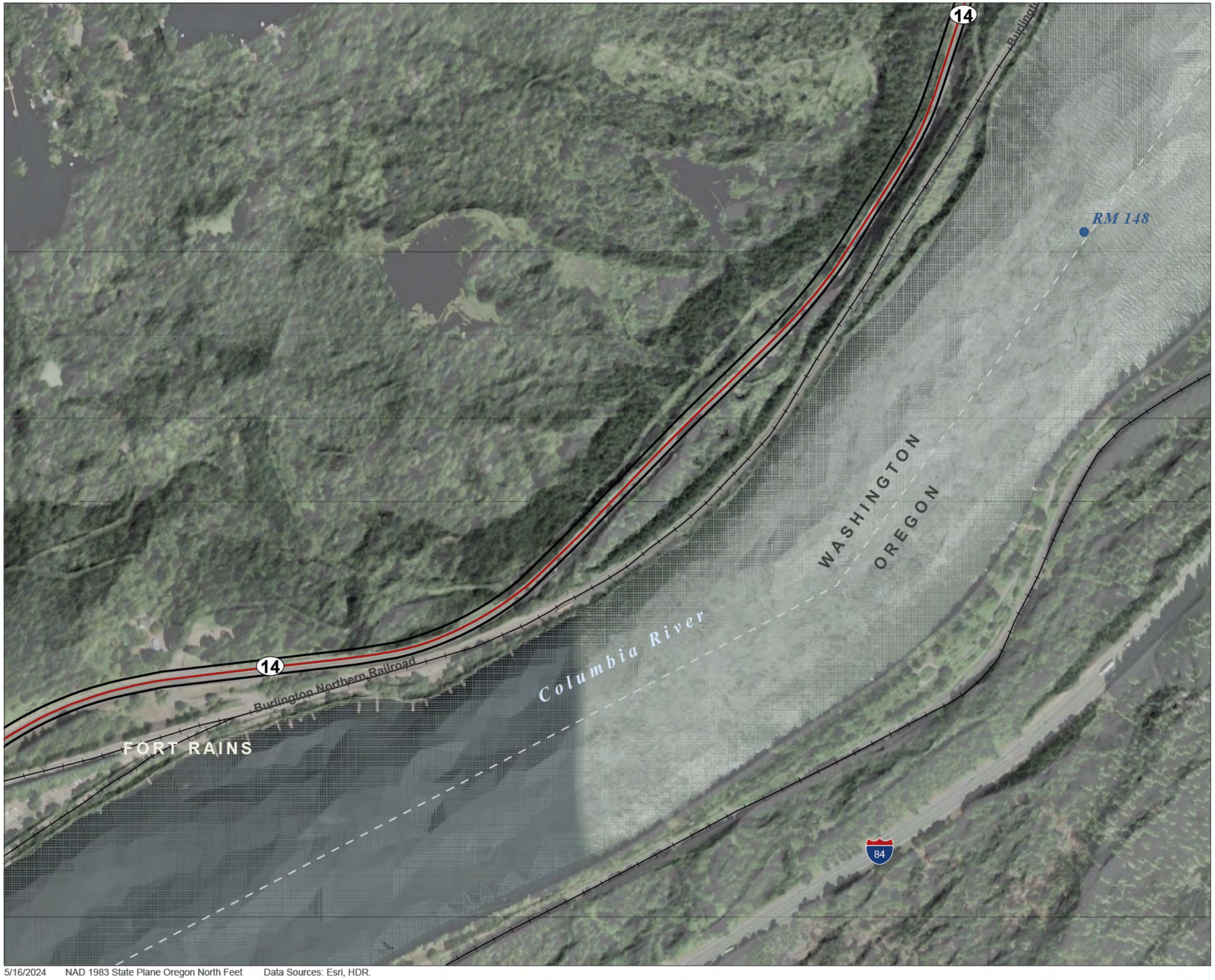


Figure 1. Overview/Survey Area
Page 5 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 14, 15
USGS Quad Name:
Bonneville Dam

- USACE RIVER MILE
- PROPOSED ALIGNMENT
- WETLAND AND WATERS SURVEY AREA
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 1. Overview/Survey Area
Page 6 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 11, 14
USGS Quad Name:
Bonneville Dam

PROPOSED ALIGNMENT

WETLAND AND WATERS SURVEY AREA

STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 1. Overview/Survey Area
Page 7 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 2, 10, 11
USGS Quad Name:
Bonneville Dam

PROPOSED ALIGNMENT

WETLAND AND WATERS SURVEY AREA

STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 1. Overview/Survey Area
Page 8 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 1, 2, 11, 12
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- STEVENSON LANDING ALTERNATIVE
- TEMPORARY HORIZONTAL DIRECTIONAL DRILLING (HDD) AREA
- TEMPORARY 3-SIDED WET COFFERDAM
- WETLAND AND WATERS SURVEY AREA
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 500 Feet
0 150 Meters

Figure 2. NWI and NHD Map
Page 1 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 29
USGS Quad Name:
Bonneville Dam

PEMf1/USC
PFO1A
PUBHx
PFO1C
Fort Cascades Dr
WASHINGTON
OREGON
RM 144
HDD Area 9
Cofferdam 2
Columbia River
Union Pacific Railroad
84
84

- USACE River Mile
- Proposed Alignment
- Wetland and Waters Survey Area
- Coffer Dam
- Temporary Horizontal Directional Drilling (HDD) area
- Temporary Horizontal Auger Bore (HAB)
- NWI Wetland
- NHD Stream/River
- NHD Waterbody
- State Boundary

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 2. NWI and NHD Map
Page 2 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 20, 21, 29
USGS Quad Name:
Bonneville Dam

- Proposed Alignment
- Wetland and Waters Survey Area
- Temporary Horizontal Directional Drilling (HDD) area
- Temporary Horizontal Auger Bore (HAB)
- NWI Wetland
- NHD Stream/River
- NHD Waterbody
- State Boundary

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 2. NWI and NHD Map
Page 3 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 15, 16, 21
USGS Quad Name:
Bonneville Dam

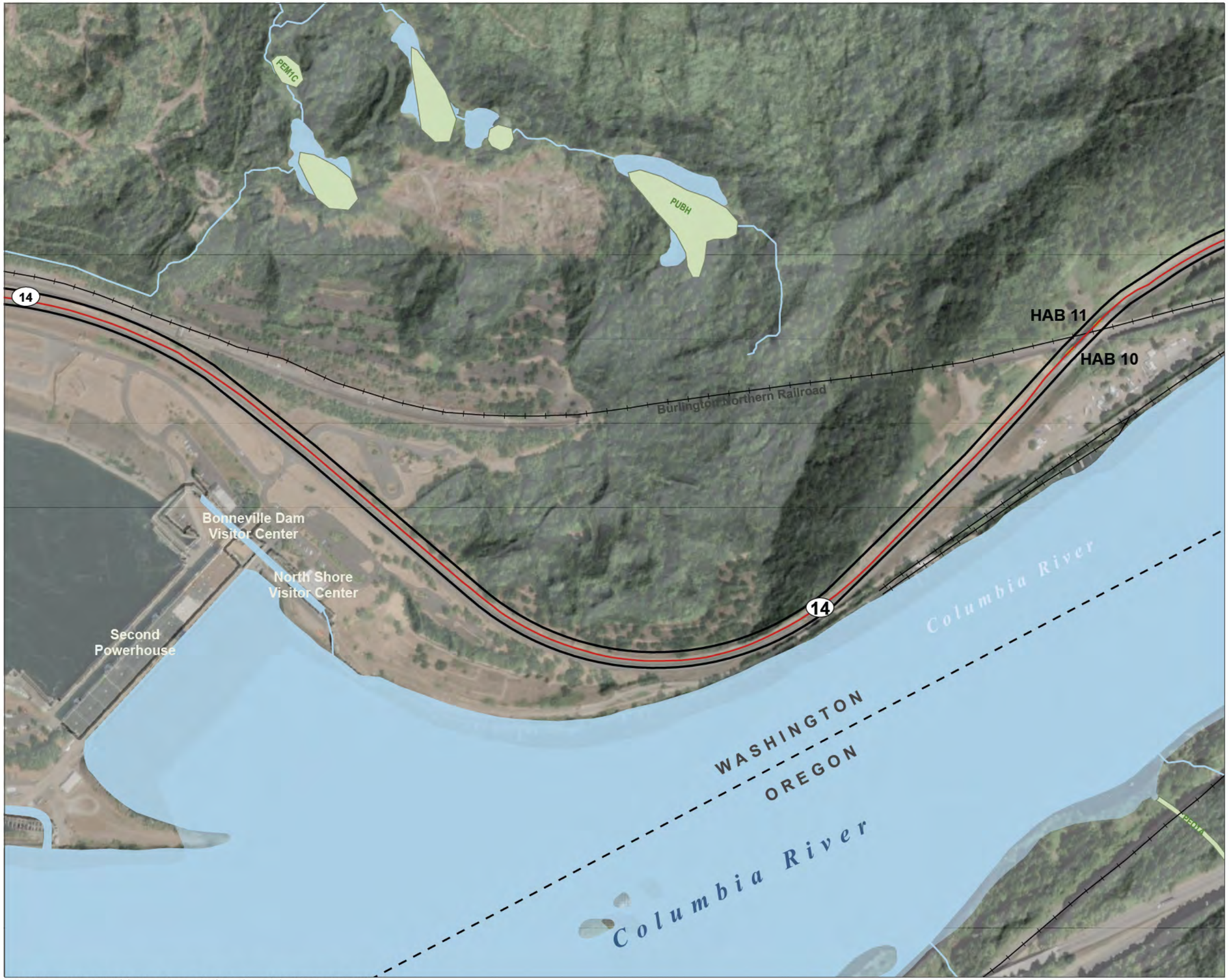
- Proposed Alignment
- Wetland and Waters Survey Area
- Temporary Horizontal Directional Drilling (HDD) area
- Temporary Horizontal Auger Bore (HAB)
- NWI Wetland
- NHD Stream/River
- NHD Waterbody
- State Boundary

CASCADE RENEWABLE TRANSMISSION

HDR

0 500 Feet
0 150 Meters

Figure 2. NWI and NHD Map
Page 4 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 15, 22
USGS Quad Name:
Bonneville Dam



- Proposed Alignment
- Wetland and Waters Survey Area
- Temporary Horizontal Directional Drilling (HDD) area
- Temporary Horizontal Auger Bore (HAB)
- NWI Wetland
- NHD Stream/River
- NHD Waterbody
- State Boundary

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

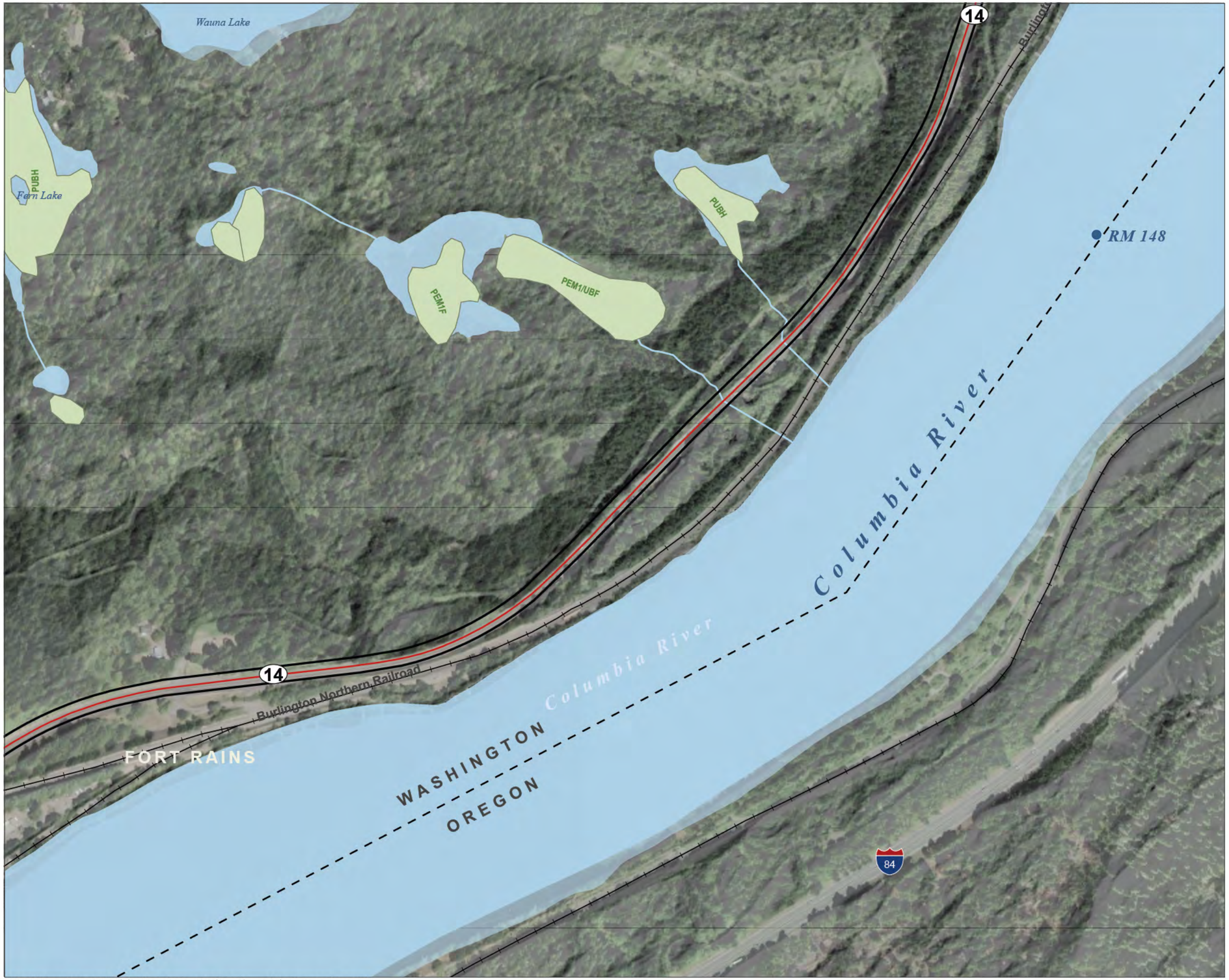


Figure 2. NWI and NHD Map
Page 5 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 14, 15
USGS Quad Name:
Bonneville Dam

- USACE River Mile
- Proposed Alignment
- Wetland and Waters Survey Area
- Temporary Horizontal Directional Drilling (HDD) area
- Temporary Horizontal Auger Bore (HAB)
- NWI Wetland
- NHD Stream/River
- NHD Waterbody
- State Boundary

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 2. NWI and NHD Map
Page 6 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 11, 14
USGS Quad Name:
Bonneville Dam

- Proposed Alignment
- Wetland and Waters Survey Area
- Temporary Horizontal Directional Drilling (HDD) area
- Temporary Horizontal Auger Bore (HAB)
- NWI Wetland
- NHD Stream/River
- NHD Waterbody
- State Boundary

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 2. NWI and NHD Map
Page 7 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 2, 10, 11
USGS Quad Name:
Bonneville Dam

- Proposed Alignment
- Wetland and Waters Survey Area
- Temporary Horizontal Directional Drilling (HDD) area
- Temporary Horizontal Auger Bore (HAB)
- NWI Wetland
- NHD Stream/River
- NHD Waterbody
- State Boundary

CASCADE RENEWABLE TRANSMISSION

HDR

0 500 Feet
0 150 Meters

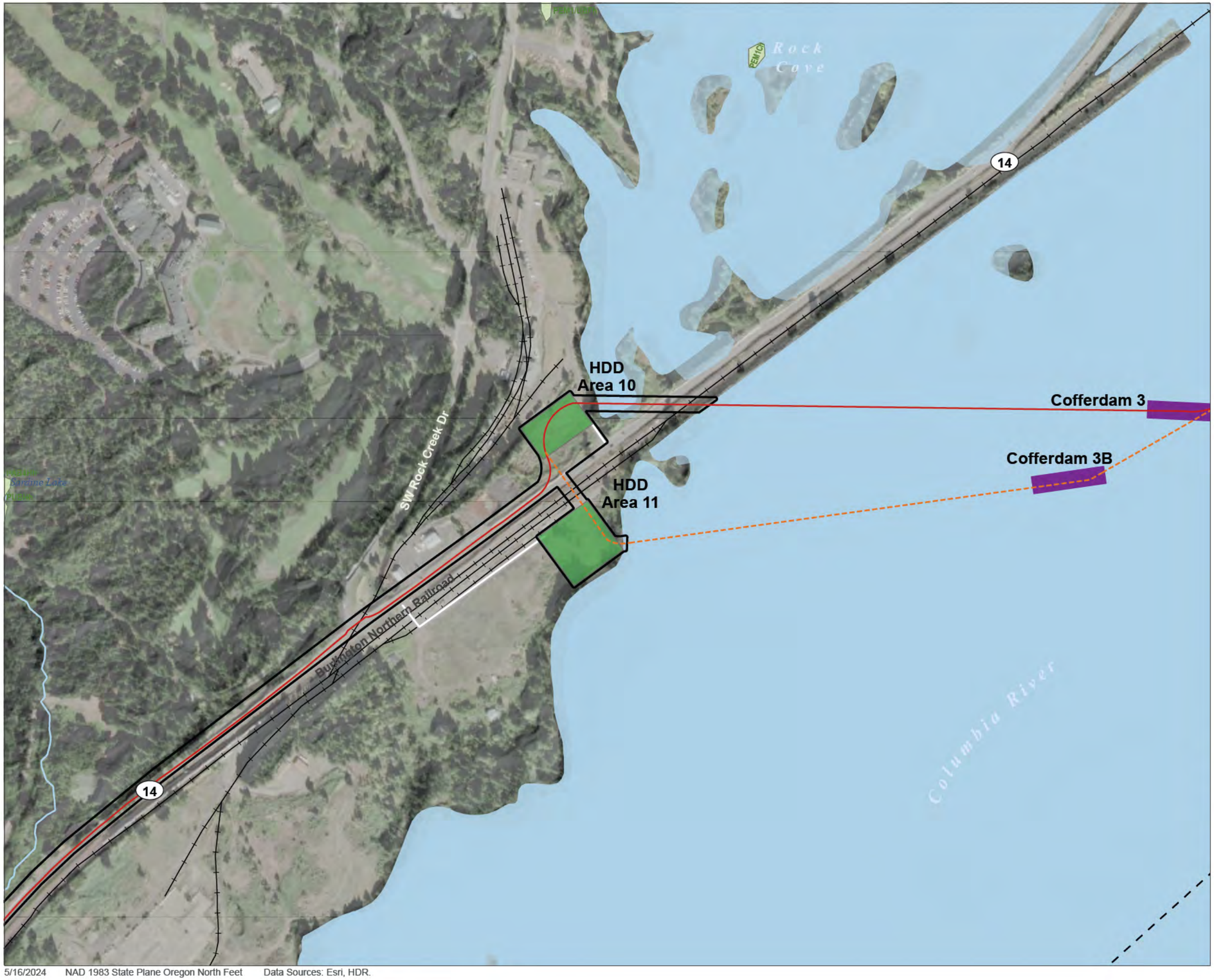


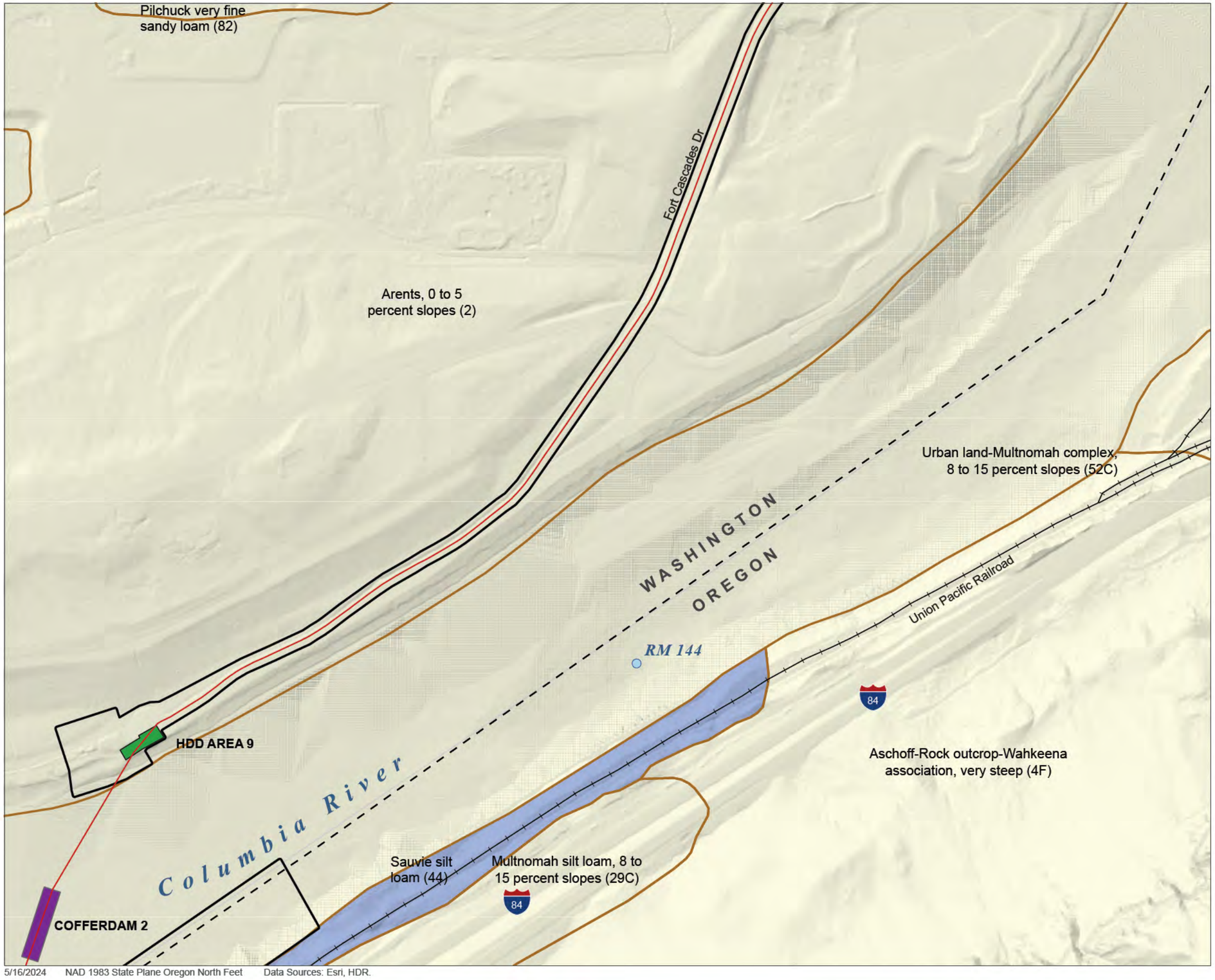
Figure 2. NWI and NHD Map
Page 8 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 1, 2, 11, 12
USGS Quad Name:
Bonneville Dam

- Proposed Alignment
- Stevenson Landing Alternative
- Wetland and Waters Survey Area
- Access Road
- Coffer Dam
- Temporary Horizontal Directional Drilling (HDD) area
- Temporary Horizontal Auger Bore (HAB)
- NWI Wetland
- NHD Stream/River
- NHD Waterbody
- State Boundary

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.



5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 3. Soils Map
Page 1 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 29
USGS Quad Name:
Bonneville Dam

- USACE RIVER MILE
- PROPOSED ALIGNMENT
- TEMPORARY HORIZONTAL DIRECTIONAL DRILLING (HDD) AREA
- TEMPORARY 3-SIDED WET COFFERDAM
- WETLAND AND WATERS SURVEY AREA
- SOIL MAP UNIT

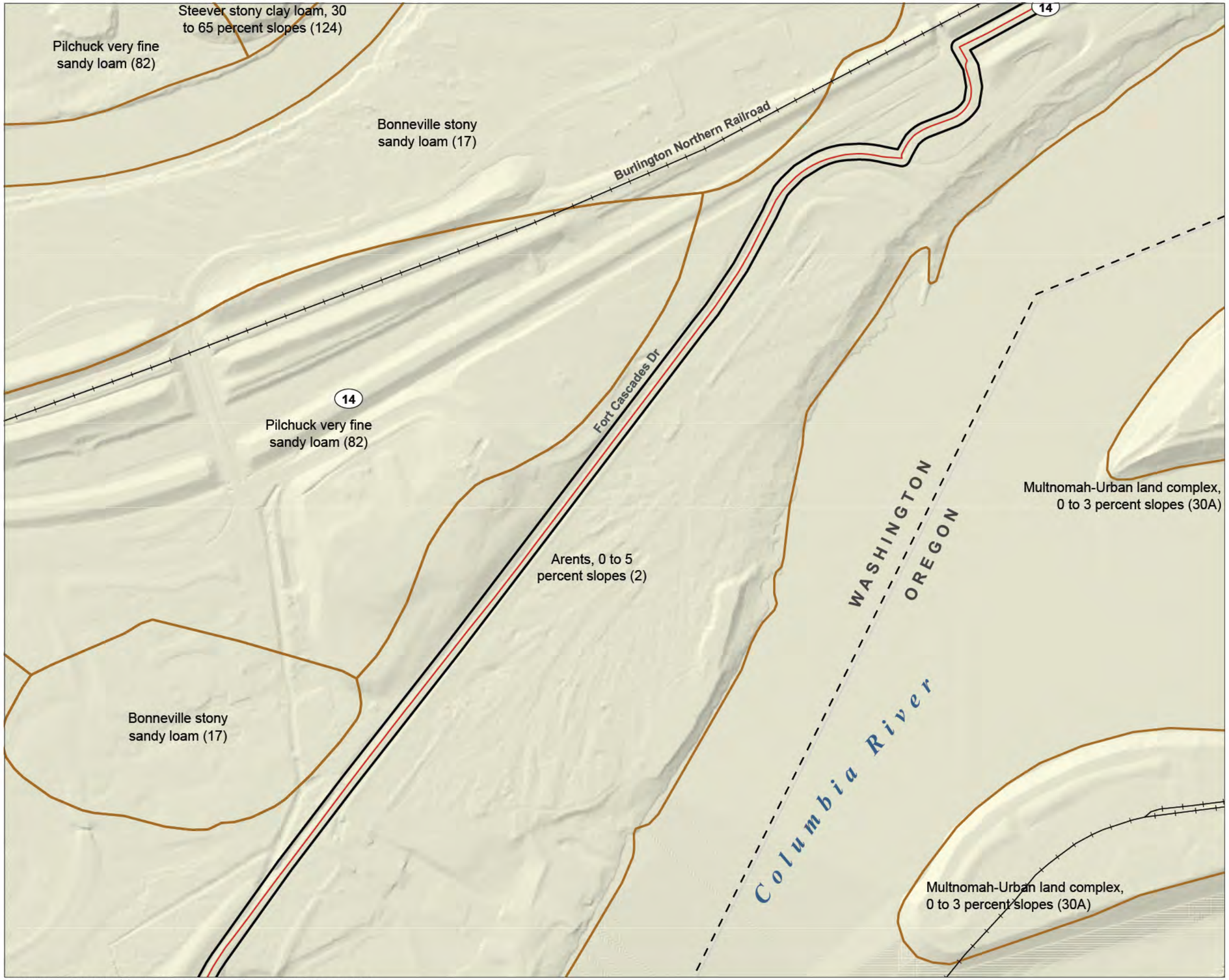
HYDRIC SOIL CLASSIFICATION

- NOT HYDRIC
- MINIMALLY HYDRIC (1 - 25%)
- PARTIALLY HYDRIC (26 - 50%)
- MODERATELY HYDRIC (51 - 75%)
- MOSTLY HYDRIC (76 - 95%)
- ALL HYDRIC
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 500 Feet
0 150 Meters



5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 3. Soils Map
Page 2 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 20, 21, 29
USGS Quad Name:
Bonneville Dam

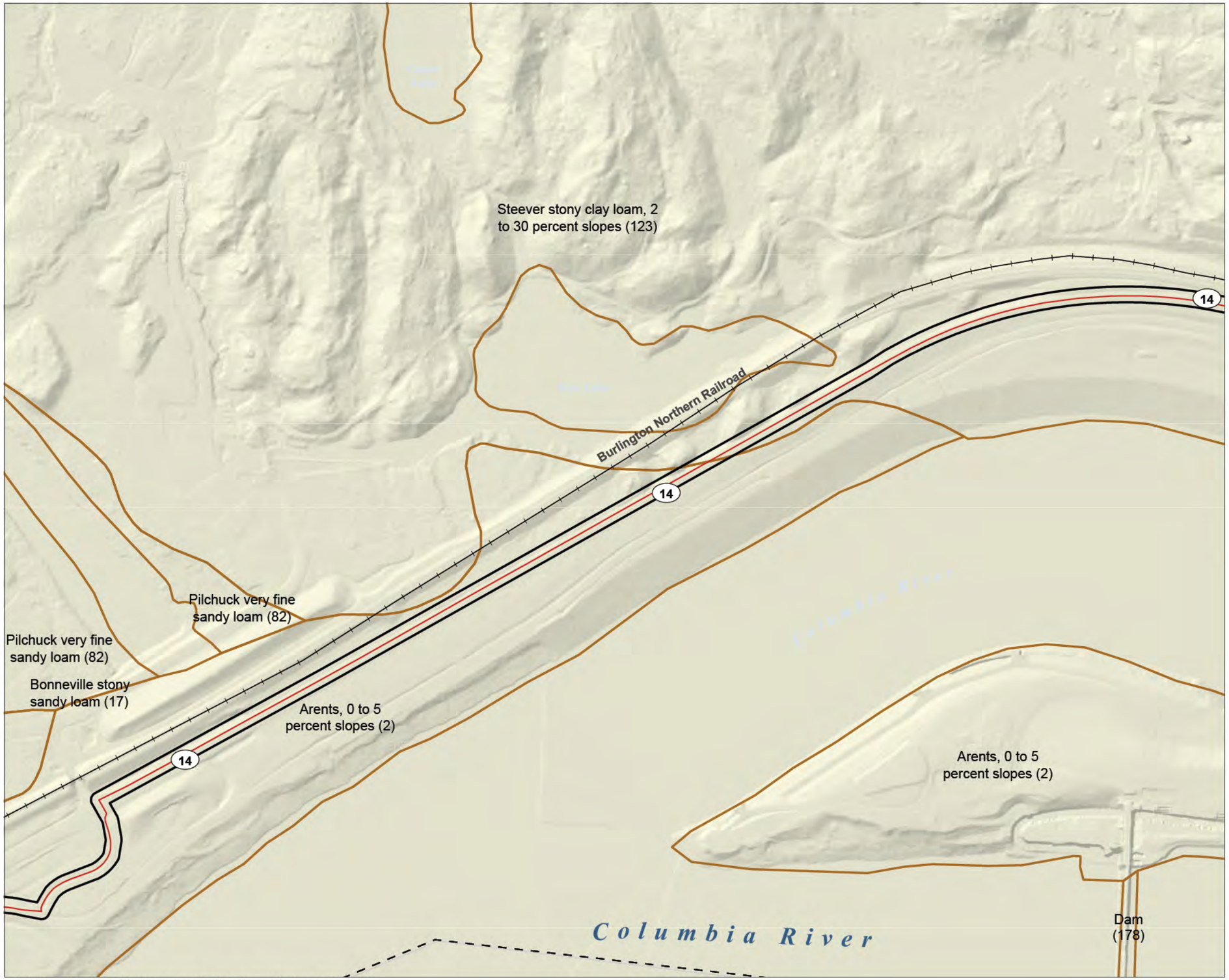
- PROPOSED ALIGNMENT
- WETLAND AND WATERS SURVEY AREA
- SOIL MAP UNIT

HYDRIC SOIL CLASSIFICATION

- NOT HYDRIC
- MINIMALLY HYDRIC (1 - 25%)
- PARTIALLY HYDRIC (26 - 50%)
- MODERATELY HYDRIC (51 - 75%)
- MOSTLY HYDRIC (76 - 95%)
- ALL HYDRIC
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters



5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 3. Soils Map
Page 3 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 15, 16, 21
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- WETLAND AND WATERS SURVEY AREA
- SOIL MAP UNIT

HYDRIC SOIL CLASSIFICATION

- NOT HYDRIC
- MINIMALLY HYDRIC (1 - 25%)
- PARTIALLY HYDRIC (26 - 50%)
- MODERATELY HYDRIC (51 - 75%)
- MOSTLY HYDRIC (76 - 95%)
- ALL HYDRIC
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

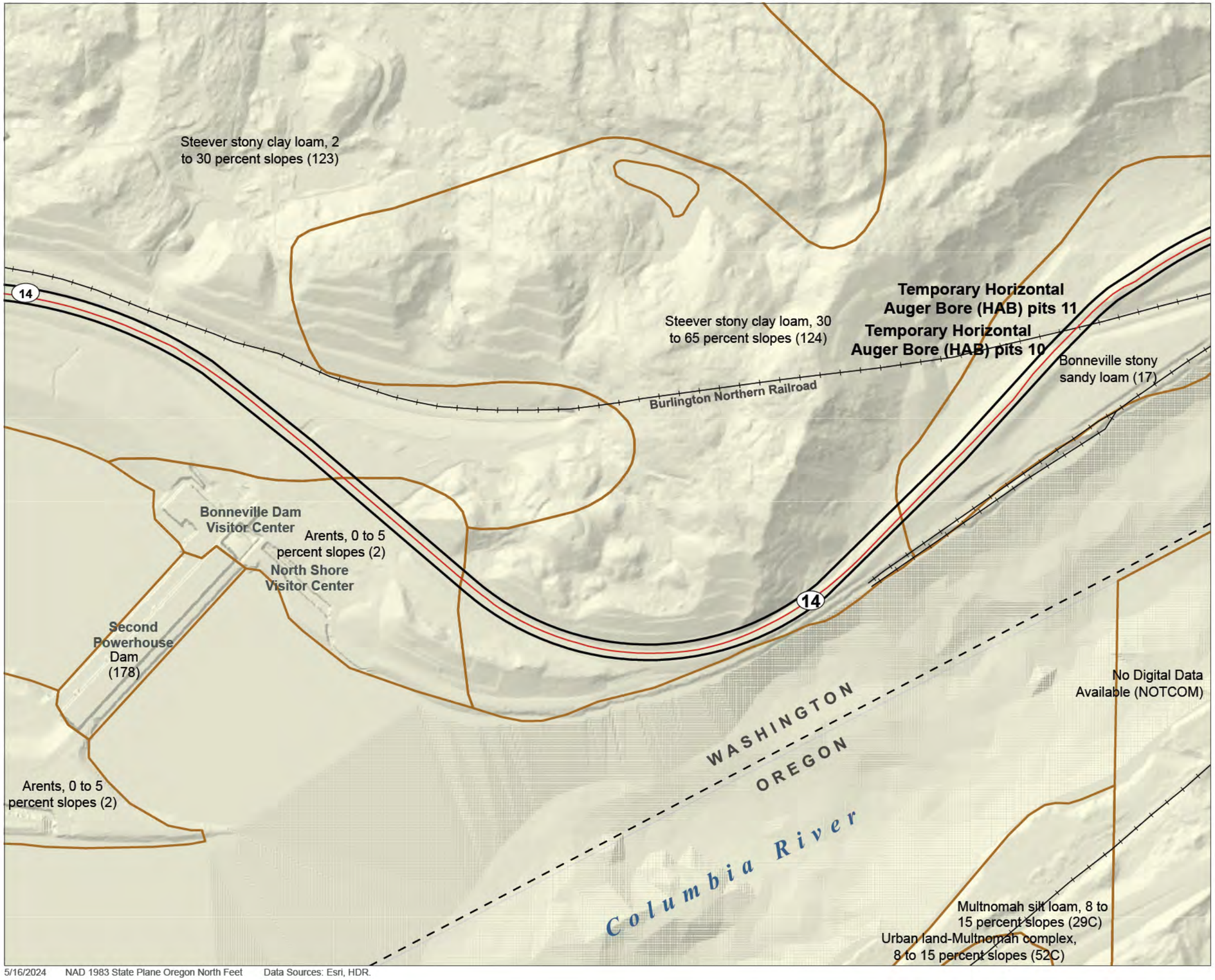


Figure 3. Soils Map
Page 4 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 15, 22
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- WETLAND AND WATERS SURVEY AREA
- SOIL MAP UNIT

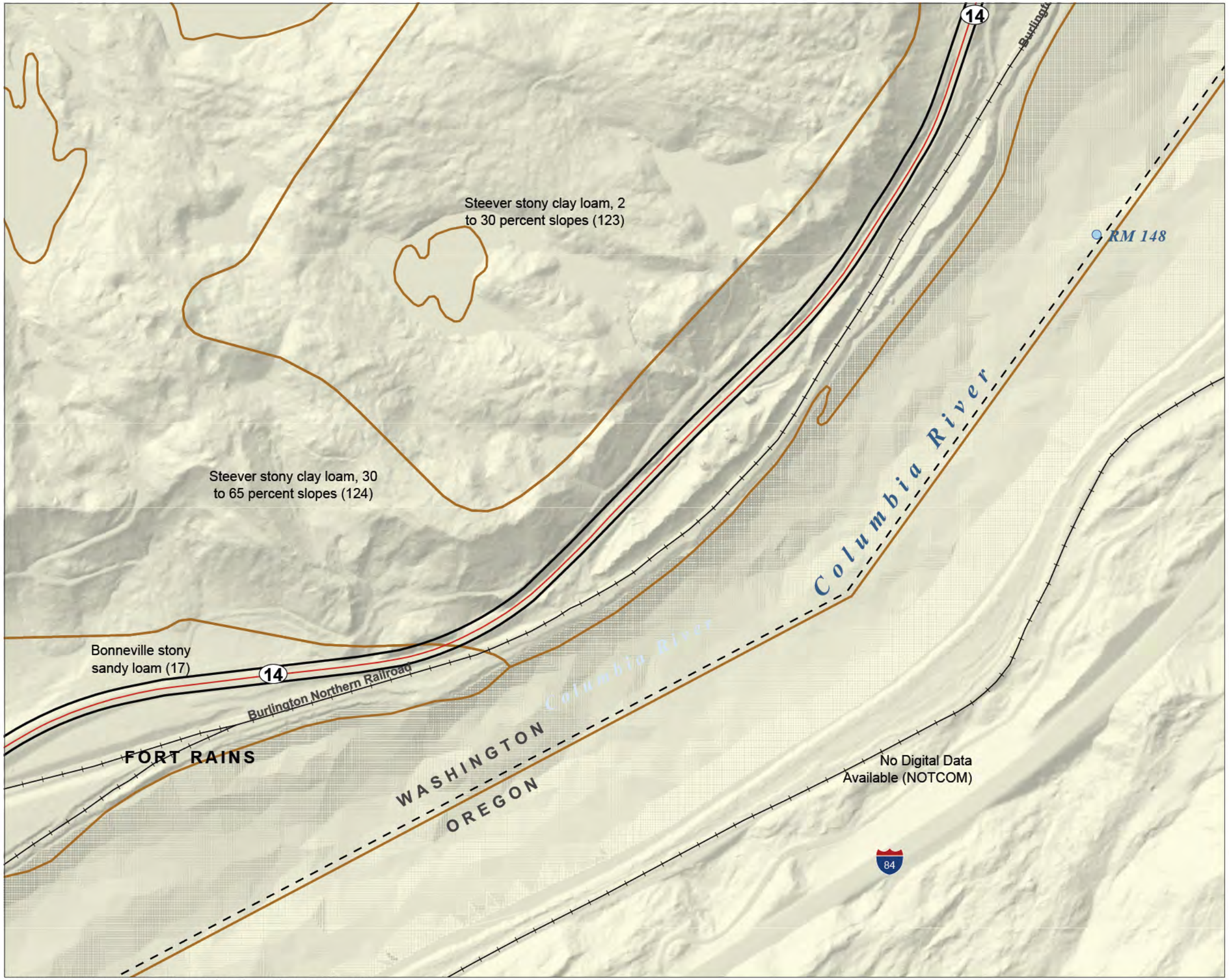
HYDRIC SOIL CLASSIFICATION

- NOT HYDRIC
- MINIMALLY HYDRIC (1 - 25%)
- PARTIALLY HYDRIC (26 - 50%)
- MODERATELY HYDRIC (51 - 75%)
- MOSTLY HYDRIC (76 - 95%)
- ALL HYDRIC
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.



5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 3. Soils Map
Page 5 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 14, 15
USGS Quad Name:
Bonneville Dam

- USACE RIVER MILE
- PROPOSED ALIGNMENT
- WETLAND AND WATERS SURVEY AREA
- SOIL MAP UNIT

HYDRIC SOIL CLASSIFICATION

- NOT HYDRIC
- MINIMALLY HYDRIC (1 - 25%)
- PARTIALLY HYDRIC (26 - 50%)
- MODERATELY HYDRIC (51 - 75%)
- MOSTLY HYDRIC (76 - 95%)
- ALL HYDRIC
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

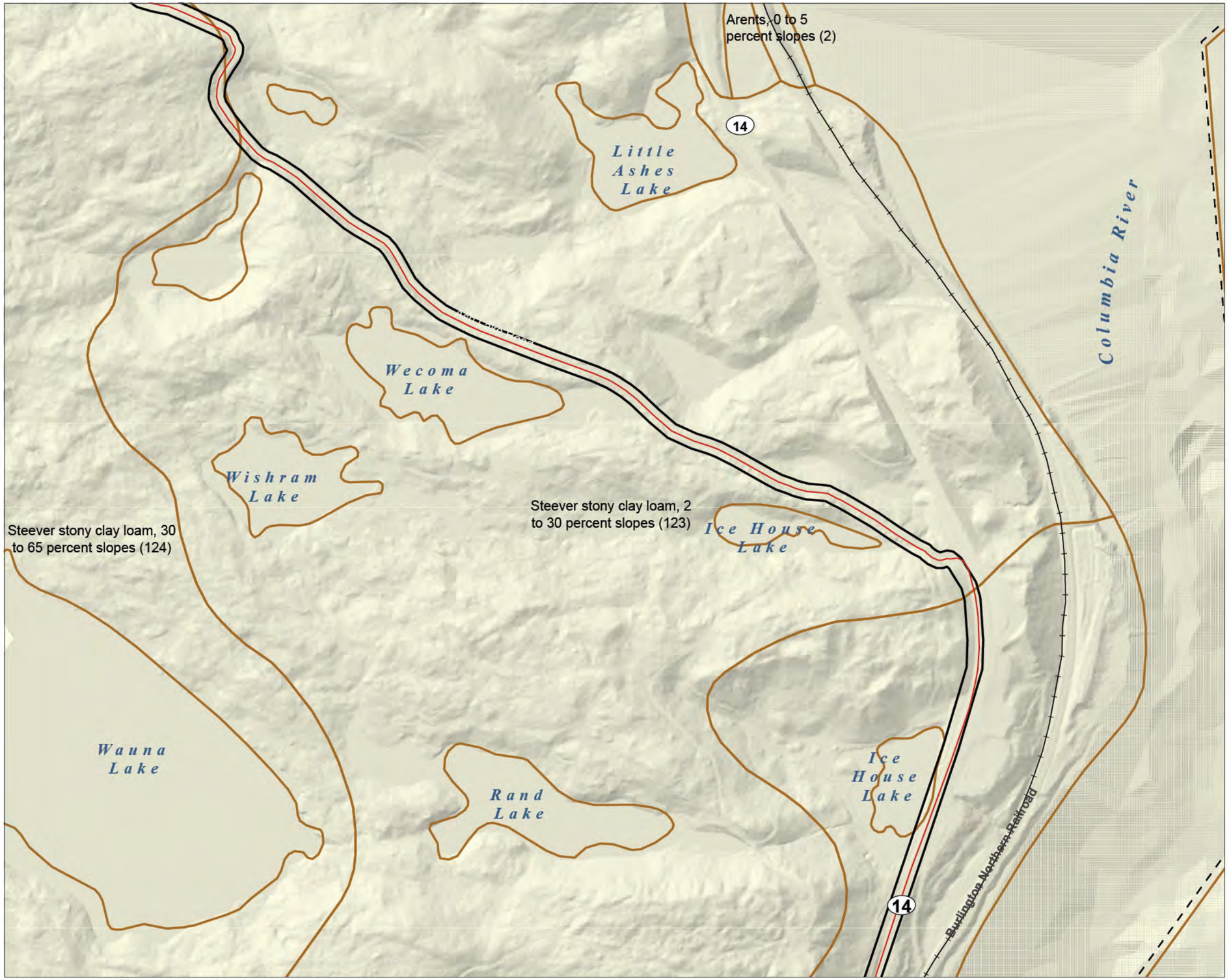


Figure 3. Soils Map
Page 6 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 11, 14
USGS Quad Name: Bonneville Dam

- PROPOSED ALIGNMENT
- WETLAND AND WATERS SURVEY AREA
- SOIL MAP UNIT

HYDRIC SOIL CLASSIFICATION

- NOT HYDRIC
- MINIMALLY HYDRIC (1 - 25%)
- PARTIALLY HYDRIC (26 - 50%)
- MODERATELY HYDRIC (51 - 75%)
- MOSTLY HYDRIC (76 - 95%)
- ALL HYDRIC
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Steever-Rock outcrop complex, 2 to 30 percent slopes (125)

Steever stony clay loam, 30 to 65 percent slopes (124)

Steever stony clay loam, 2 to 30 percent slopes (123)

Arents, 0 to 5 percent slopes (2)

14

Burlington Northern Railroad

Columbia River

Little Ashes Lake

Ash Lake Road

Blue Lake Rd

14

5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 3. Soils Map
Page 7 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 2, 10, 11
USGS Quad Name:
Bonneville Dam

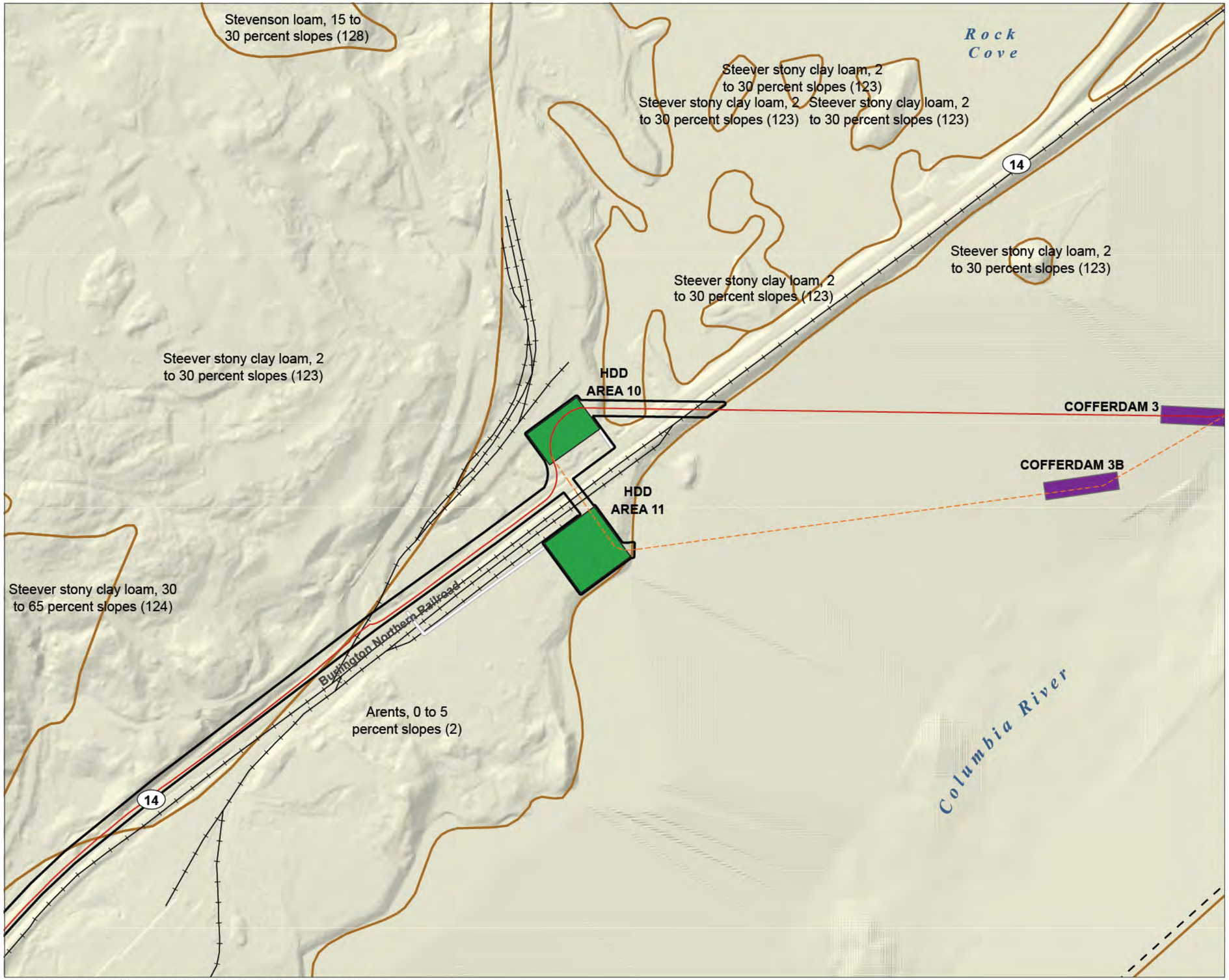
- PROPOSED ALIGNMENT
- WETLAND AND WATERS SURVEY AREA
- SOIL MAP UNIT

HYDRIC SOIL CLASSIFICATION

- NOT HYDRIC
- MINIMALLY HYDRIC (1 - 25%)
- PARTIALLY HYDRIC (26 - 50%)
- MODERATELY HYDRIC (51 - 75%)
- MOSTLY HYDRIC (76 - 95%)
- ALL HYDRIC
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters



5/16/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 3. Soils Map
Page 8 of 8
Date: 5/16/2024
Township and Range: T02N R07E
Section: 1, 2, 11, 12
USGS Quad Name:
Bonneville Dam

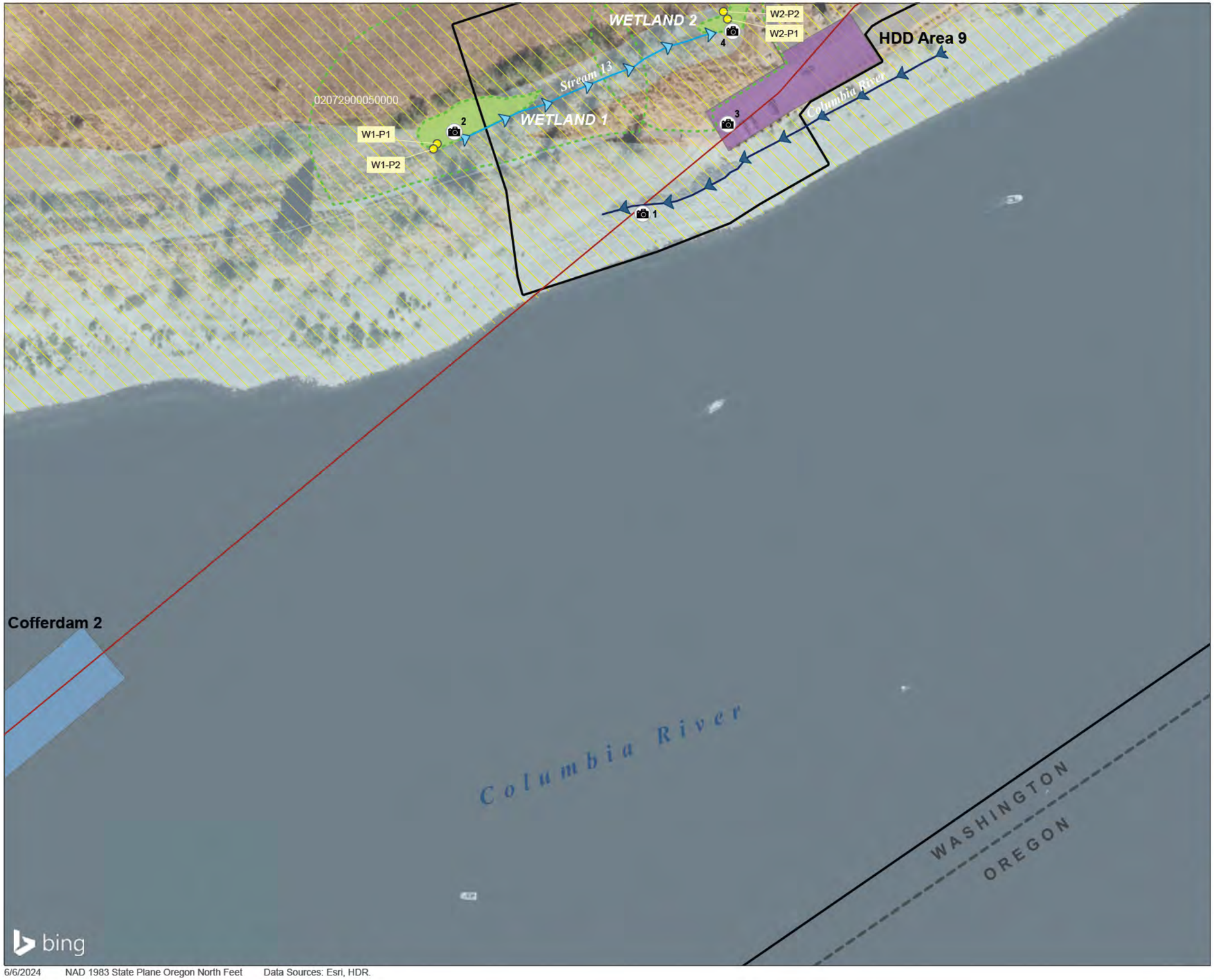
- PROPOSED ALIGNMENT
- STEVENSON LANDING ALTERNATIVE
- ACCESS ROAD
- TEMPORARY HORIZONTAL DIRECTIONAL DRILLING (HDD) AREA
- TEMPORARY 3-SIDED WET COFFERDAM
- WETLAND AND WATERS SURVEY AREA
- SOIL MAP UNIT

HYDRIC SOIL CLASSIFICATION

- NOT HYDRIC
- MINIMALLY HYDRIC (1 - 25%)
- PARTIALLY HYDRIC (26 - 50%)
- MODERATELY HYDRIC (51 - 75%)
- MOSTLY HYDRIC (76 - 95%)
- ALL HYDRIC
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 500 Feet
0 150 Meters



6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Map Page 1 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 29
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- PROPOSED ALIGNMENT
- ESTIMATED WETLAND
- WETLAND BUFFER
- DELIENATED OHWM
- DELINEATED STREAM CENTERLINE
- RIPARIAN BUFFER
- TEMPORARY HORIZONTAL DIRECTIONAL DRILLING (HDD) AREA
- TEMPORARY 3-SIDED WET COFFERDAM
- WETLAND AND WATERS SURVEY AREA
- NO DIG ZONE
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

Figure 4. Wetland and Water Survey
Page 2 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 29
USGS Quad Name:
Bonneville Dam

02072900020000

NORTH BONNEVILLE

02072900050000

Fort Cascades Dr

Ditch 2

Ditch 1

Stream 13

WETLAND 2

W2-P1

W2-P2

W2-P3

W2-P4

VP-1

HDD Area 9

Columbia River

3

4

5

6

bing

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- ESTIMATED WETLAND
- WETLAND BUFFER
- DELIENATED OHWM
- DELINEATED DITCH CENTERLINE
- DELINEATED STREAM CENTERLINE
- RIPARIAN BUFFER
- TEMPORARY HORIZONTAL DIRECTIONAL DRILLING (HDD) AREA
- WETLAND AND WATERS SURVEY AREA
- NO DIG ZONE
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

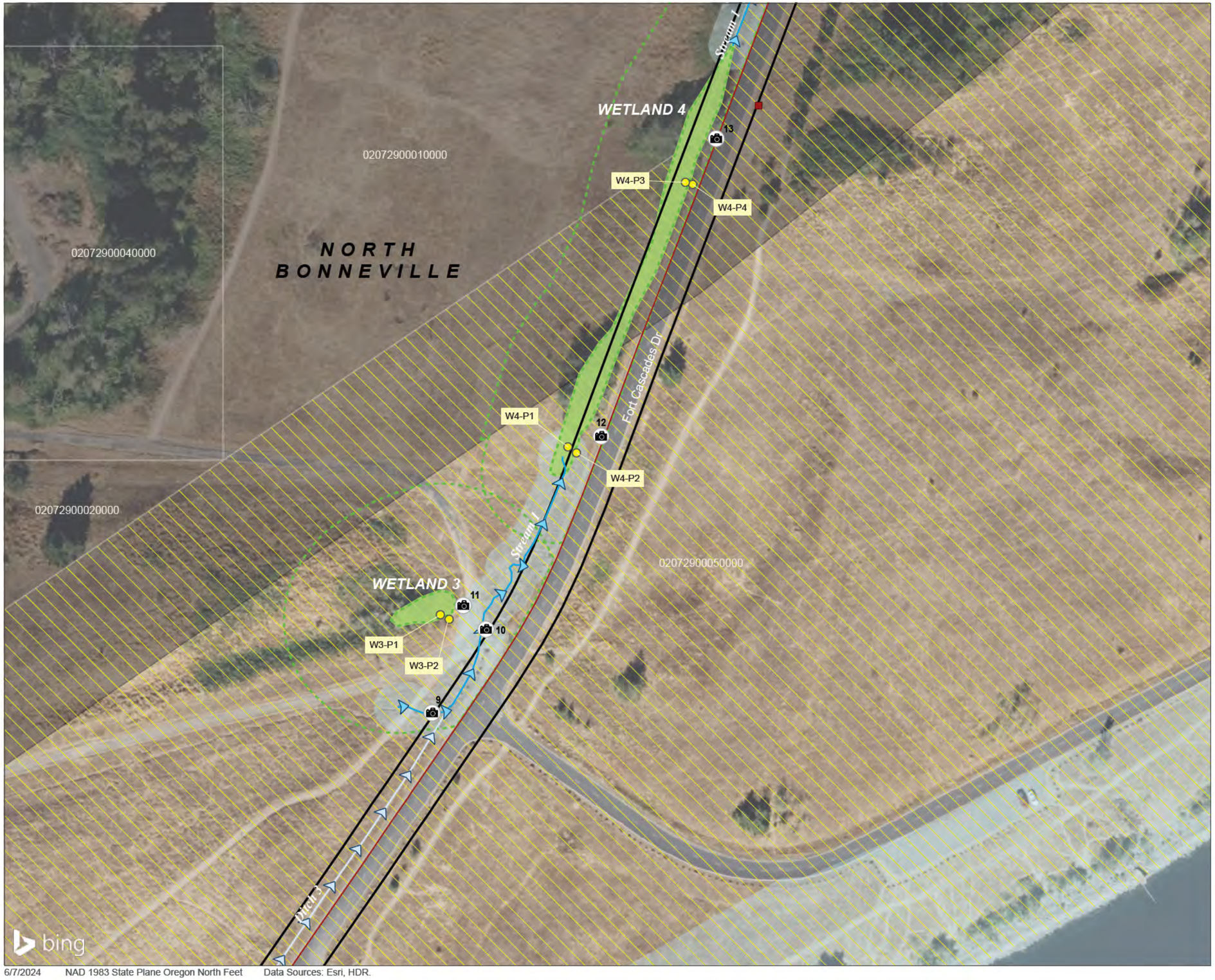
Figure 4. Wetland and Water Survey
Page 3 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 29
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- DELINEATED DITCH CENTERLINE
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- NO DIG ZONE
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.



6/7/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 4 of 33
Date: 6/7/2024
Township and Range: T02N R07E
Section: 29
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- ESTIMATED WETLAND
- WETLAND BUFFER
- DELINEATED DITCH CENTERLINE
- DELINEATED STREAM CENTERLINE
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- NO DIG ZONE
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

Figure 4. Wetland and Water Survey
Page 5 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 29
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- ESTIMATED WETLAND
- WETLAND BUFFER
- DELINEATED STREAM CENTERLINE
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- NO DIG ZONE
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Date: 6/6/2024
Township and Range: T02N R07E
Section: 20, 21, 29
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- PROPOSED ALIGNMENT
- WETLAND AND WATERS SURVEY AREA
- NO DIG ZONE
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 7 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 20, 21, 29
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- PROPOSED ALIGNMENT
- DELINEATED DITCH CENTERLINE
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 8 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 20, 21, 29
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 9 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 20, 21, 29
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

Figure 4. Wetland and Water Survey
Page 10 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 15, 16, 21
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 11 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 15, 16, 21
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- PROPOSED ALIGNMENT
- ESTIMATED WETLAND
- WETLAND BUFFER
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 12 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 15, 16, 21
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- CULVERTS
- PROPOSED ALIGNMENT
- ESTIMATED WETLAND
- WETLAND BUFFER
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 13 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 15, 16, 21
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 14 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 15, 22
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

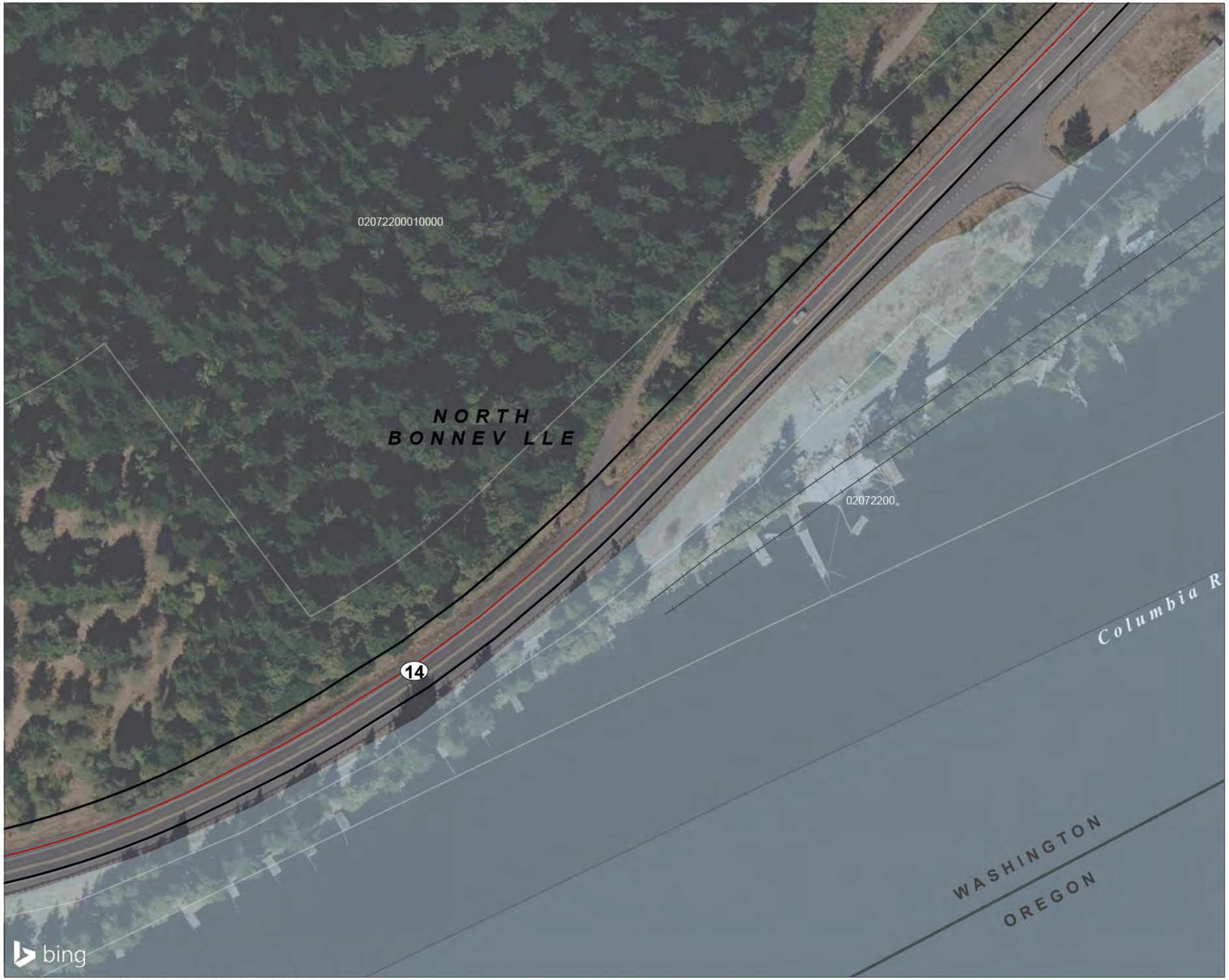
Figure 4. Wetland and Water Survey
Page 15 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 15, 22
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- PROPOSED ALIGNMENT
- ESTIMATED WETLAND
- WETLAND BUFFER
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters



6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 16 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 15, 22
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 17 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 15, 22
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- RIPARIAN BUFFER
- TEMPORARY HORIZONTAL AUGER BORE (HAB)
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 18 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 14, 15
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

Figure 4. Wetland and Water Survey Page 19 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 14, 15
USGS Quad Name: Bonneville Dam

- PHOTO POINT
- PROPOSED ALIGNMENT
- ESTIMATED WETLAND
- WETLAND BUFFER
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 20 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 14, 15
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- DELINEATED WETLAND
- WETLAND BUFFER
- DELINEATED DITCH CENTERLINE
- DELINEATED STREAM CENTERLINE
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

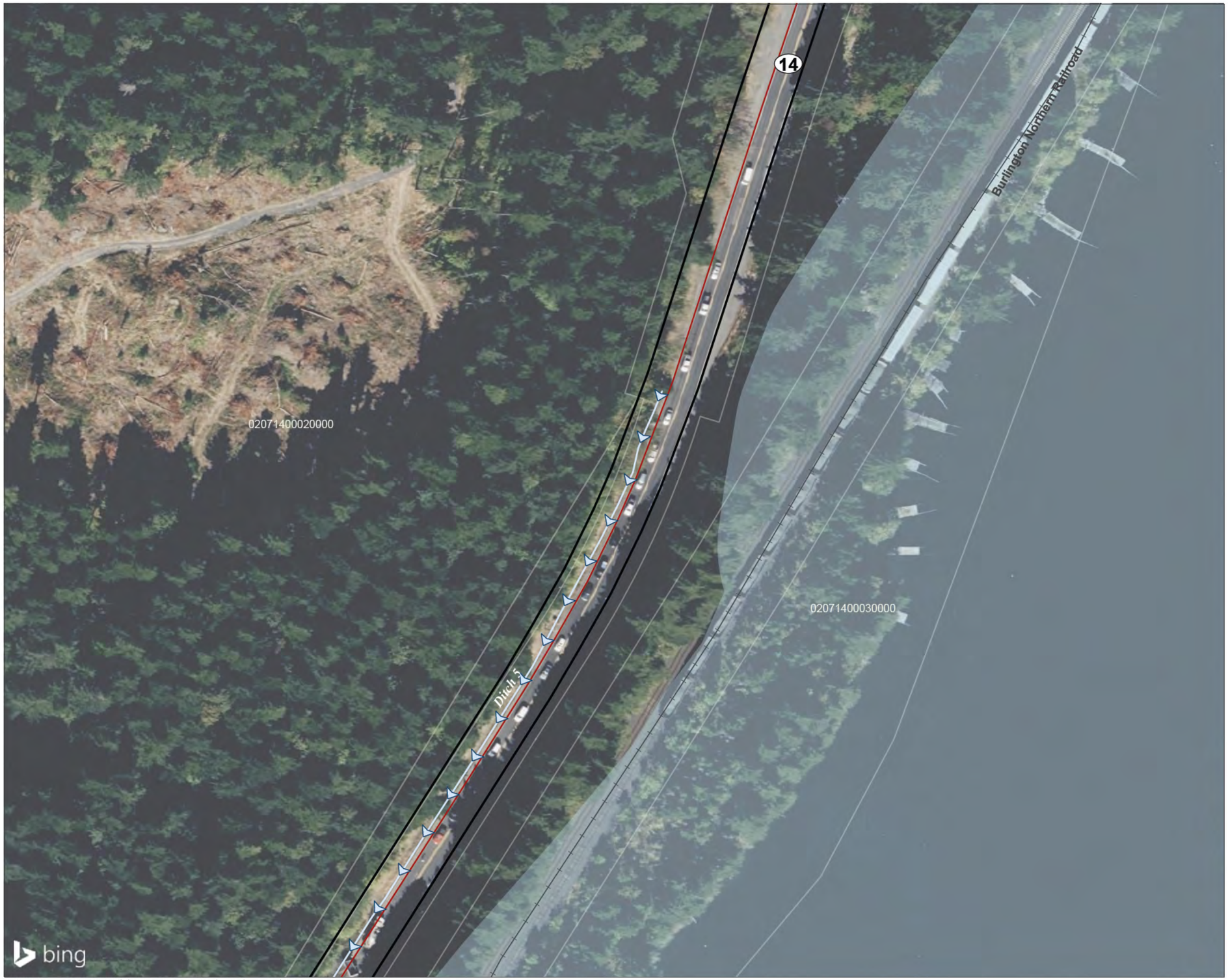


Figure 4. Wetland and Water Survey
Page 21 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 14, 15
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- DELINEATED DITCH CENTERLINE
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

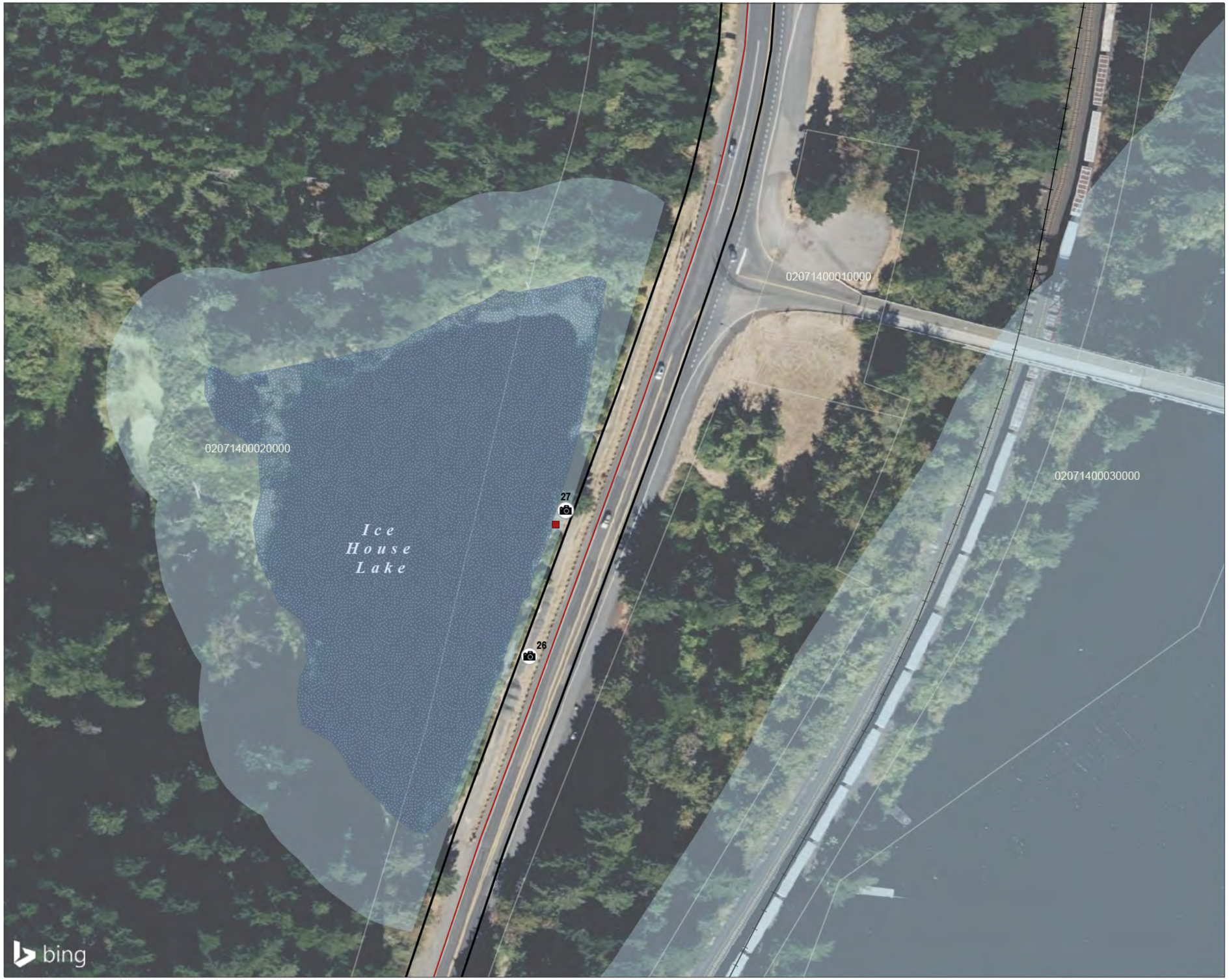


Figure 4. Wetland and Water Survey
Page 22 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 11, 14
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- CULVERTS
- PROPOSED ALIGNMENT
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 23 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 11, 14
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- CULVERTS
- PROPOSED ALIGNMENT
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

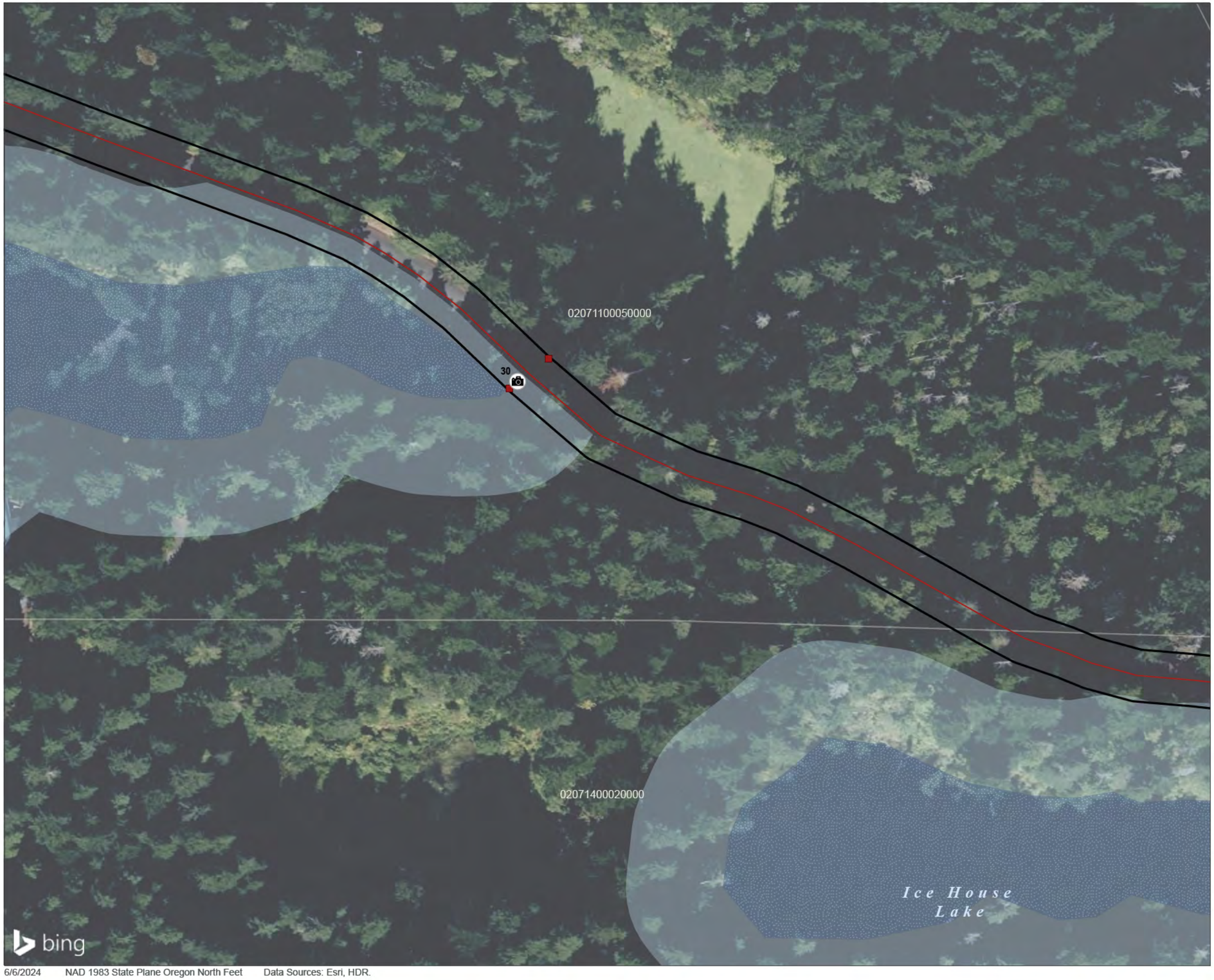


Figure 4. Wetland and Water Survey
Page 24 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 11, 14
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- CULVERTS
- PROPOSED ALIGNMENT
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

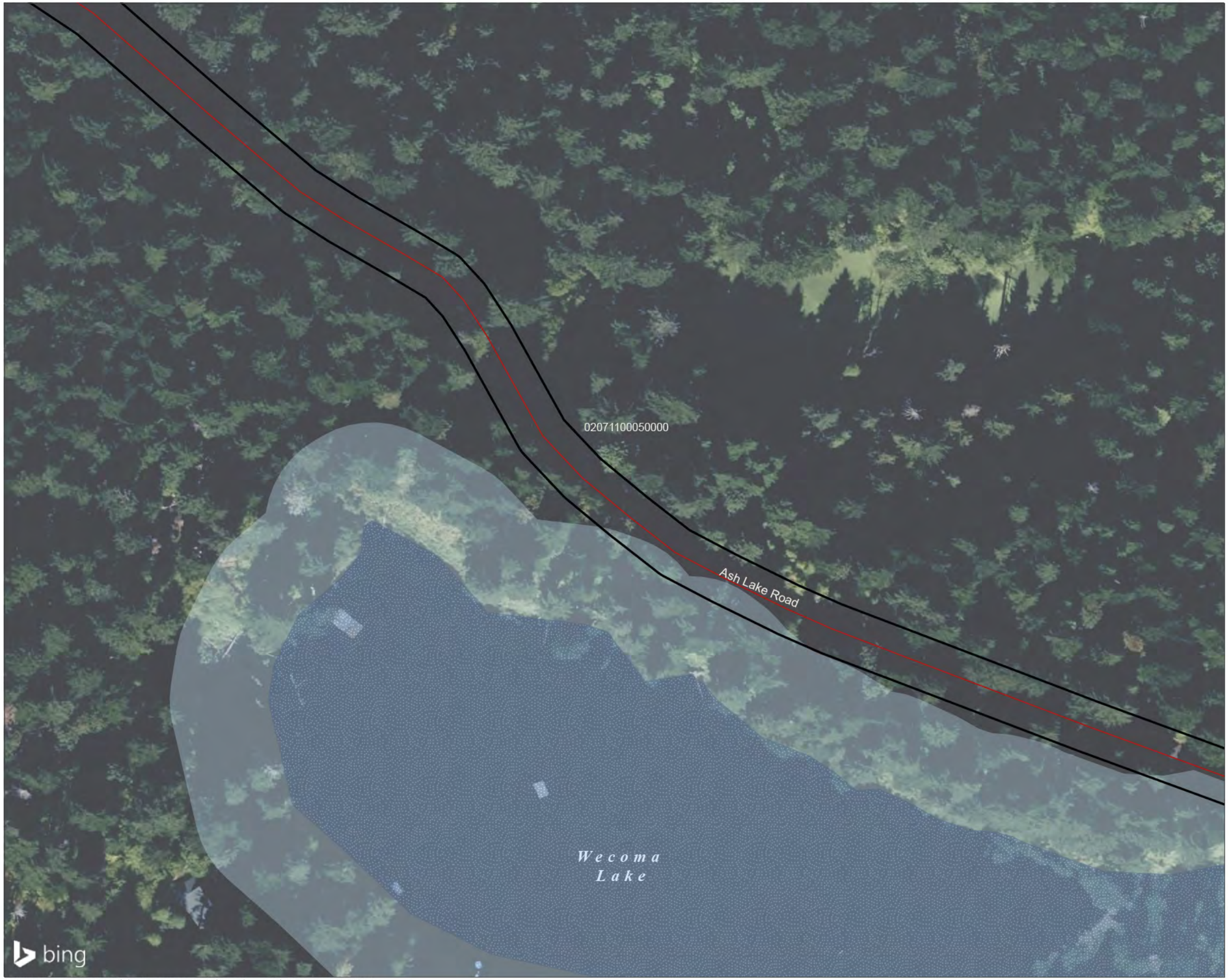


Figure 4. Wetland and Water Survey
Page 25 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 11, 14
USGS Quad Name:
Bonneville Dam

- PROPOSED ALIGNMENT
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 26 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 11, 14
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- CULVERTS
- PROPOSED ALIGNMENT
- ESTIMATED STREAM CENTERLINE
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 27 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 2, 10, 11
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- DELINEATED WETLAND
- WETLAND BUFFER
- DELINEATED STREAM CENTERLINE
- ESTIMATED STREAM CENTERLINE
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

Figure 4. Wetland and Water Survey Page 28 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 2, 10, 11
USGS Quad Name: Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- DELINEATED WETLAND
- WETLAND BUFFER
- DELINEATED DITCH CENTERLINE
- DELINEATED STREAM CENTERLINE
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 29 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 2, 10, 11
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- DELINEATED WETLAND
- WETLAND BUFFER
- DELINEATED STREAM CENTERLINE
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

Figure 4. Wetland and Water Survey
Page 30 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 2, 10, 11
USGS Quad Name:
Bonneville Dam

02070200470000
02070200460000
02071100080000
02071100020000
02071100040000
Mellicott Rd
WETLAND 15
WETLAND 14
WETLAND 13
Stream 11
Stream 10
Stream 9
W15-P1
W15-P2
W14-P1
W14-P2
W13-P1
W13-P2
51
50
49
48
47
bing

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- DELINEATED WETLAND
- WETLAND BUFFER
- DELINEATED STREAM CENTERLINE
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 31 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 1, 2, 11, 12
USGS Quad Name:
Bonneville Dam

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

- PHOTO POINT
- SAMPLE PLOT
- PROPOSED ALIGNMENT
- DELINEATED WETLAND
- WETLAND BUFFER
- DELINEATED DITCH CENTERLINE
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

HDR

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 32 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 1, 2, 11, 12
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- DELINEATED WETLAND
- WETLAND BUFFER
- RIPARIAN BUFFER
- ACCESS ROAD
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters

6/6/2024 NAD 1983 State Plane Oregon North Feet Data Sources: Esri, HDR.

Figure 4. Wetland and Water Survey
Page 33 of 33
Date: 6/6/2024
Township and Range: T02N R07E
Section: 1, 2, 11, 12
USGS Quad Name:
Bonneville Dam

- PHOTO POINT
- SAMPLE PLOT
- CULVERTS
- PROPOSED ALIGNMENT
- STEVENSON LANDING ALTERNATIVE
- DELINEATED WETLAND
- WETLAND BUFFER
- ESTIMATED OHWM
- ESTIMATED STREAM CENTERLINE
- ESTIMATED WATERBODY
- RIPARIAN BUFFER
- TEMPORARY HORIZONTAL DIRECTIONAL DRILLING (HDD) AREA
- ACCESS ROAD
- WETLAND AND WATERS SURVEY AREA
- TAXLOT
- CITY BOUNDARY
- STATE BOUNDARY

CASCADE RENEWABLE TRANSMISSION

0 100 Feet
0 40 Meters