

City Center Access Project Draft Ecosystems Discipline Report

Prepared for



March 2025

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Prepared for

City of Federal Way
33325 8th Avenue S
Federal Way, WA 98003

Prepared by

Parametrix
719 2nd Avenue, Suite 200
Seattle, WA 98104
T. 206.394.3700 F. 1.206.649.6353
www.parametrix.com

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Acronyms and Abbreviations

BA	biological assessment
BMP	best management practice
BPA	Bonneville Power Administration
BRT	bus rapid transit
CFR	Code of Federal Regulations
City	City of Federal Way
Ecology	Washington State Department of Ecology
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FHWA	Federal Highway Administration
ft	foot/feet
FR	Federal Regulations
FWLE	Federal Way Link Extension
FWRC	Federal Way Revised Code
HGM	Hydrogeomorphic Wetland Classification
HOV	high-occupancy vehicle
HUC	hydrologic unit code
I-5	Interstate 5
IPaC	Information for Planning and Consultation
KCC	King County Code
LRR	land resource region
MBTA	Migratory Bird Treaty Act
MLRA	major land resource area
MP	milepost
NHP	Natural Heritage Program

Acronyms and Abbreviations (continued)

NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
OHWM	ordinary high-water mark
OMF	Operations and Maintenance Facility
PAB	palustrine aquatic bed
PEM	palustrine emergent
PFO	palustrine forested
PGIS	pollution-generating impervious surface
project	City Center Access Project
PSS	palustrine scrub-shrub
sf	square foot/feet
Sound Transit	Central Puget Sound Transit Authority
SR	State Route
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington State Department of Fish and Wildlife
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation

1. Introduction

The City Center Access Project, hereafter referred to as “the project,” will provide improved multimodal mobility and access for regional and local trips while protecting the interstate system in Federal Way (Figure 1-1). It would provide congestion relief along S 320th Street and expanded multimodal facilities across Interstate 5 (I-5). The project will consist of the following project elements:

- Modification of the S 320th Street interchange by adding braided ramps and access at S 324th Street.
- Construction of a new two-lane bridge over I-5 at S 324th Street.
- Extension of S 324th Street from 23rd Avenue S to Weyerhaeuser Way S.
- Widening S 324th Street from State Route (SR) 99 to 23rd Avenue S.
- Improvements to S 320th Street east of I-5 to add high-occupancy vehicle (HOV) lanes.
- Nonmotorized improvements along 23rd Avenue S, S 320th Street, and S 324th Street.
- Culvert replacement of fish passage barriers.

Correction of four fish passage barriers on WSDOT-owned injunction culverts (WDFW culvert IDs 992364, 995299, 995300) has been determined to be necessary according to a federal permanent injunction requiring the state of Washington to accelerate fish barrier corrections for salmon and steelhead streams in the Puget Sound area (Federal Court Injunction 2013) and the WSDOT Fish Passage Performance Report (WSDOT 2019). These barriers were identified by the Washington State Department of Fish and Wildlife (WDFW) and the Washington State Department of Transportation (WSDOT) (WDFW 2024a). The fourth fish passage barrier correction is a privately owned culvert (WDFW culvert ID 420614), beneath Winged Foot Way) that is directly connected to the WSDOT-owned culvert ID 992364.

The purpose of this report is to identify and describe wetlands, aquatic resources, vegetation habitats, and wildlife that occur within the ecosystem study area, defined as the project footprint and all areas within 300 feet of the footprint for wetlands and streams, and within 200 feet of the footprint for vegetation and wildlife habitats (see Figure 1-2 and Section 1.2). A biological assessment (BA) has been prepared separately to address potential impacts to ESA-listed species (Parametrix 2023). This ecosystem discipline report helps the City of Federal Way (the City) achieve the following:

- Support the National Environmental Policy Act and State Environmental Policy Act documentation for the project.
- Avoid and minimize impacts to wetlands, other aquatic ecosystems, and vegetation during the project design process and construction.
- Document wetland and stream boundary determinations and jurisdictional ditch locations, where right of entry was received, for review by regulatory authorities.
- Estimate unavoidable project impacts to aquatic ecosystems and other habitat, based on the project’s preliminary design.
- Determine appropriate mitigation for unavoidable project impacts.

1.1 Proposed Project

1.1.1 Project Location

The study area is largely located within the City and Water Resource Inventory Area (WRIA) 10 (Puyallup/White Watershed). However, the project extends east along S 320th Street into unincorporated King County and WRIA 9 (Green/Duwamish Watershed) as it approaches Military Road South (Figure 1-1).

The center of the project, located at I-5 and S 320th Street, is at latitude 47.314849 and longitude -122.297775. The study area includes parts of Sections 9, 10, 15, 16, and 21 in Township 21 North, Range 4 East, Willamette Meridian, and within U.S. Department of Agriculture (USDA) Major Land Resource Area (MLRA) 2 and USDA Land Resource Region (LRR) A.

1.1.2 Project Purpose

The City initiated the project to determine what transportation system changes are needed to preserve future mobility in the City Center. The Federal Way City Center Core is designated as one of 29 regional growth centers identified in the Vision 2050: A Plan for the Central Puget Sound Region (PSRC 2020). The purpose of the project is to improve the economic vitality of the City Center and to improve the quality of life for people who work, play, and live in the City by increasing multimodal mobility and access to regional and local trips while protecting the integrity of the interstate system. Access and mobility are limited by congestion issues along S 320th Street between Pacific Highway S and Military Road, including to and from I-5, and by the lack of multimodal facilities across I-5.

1.1.3 Preferred Alternative

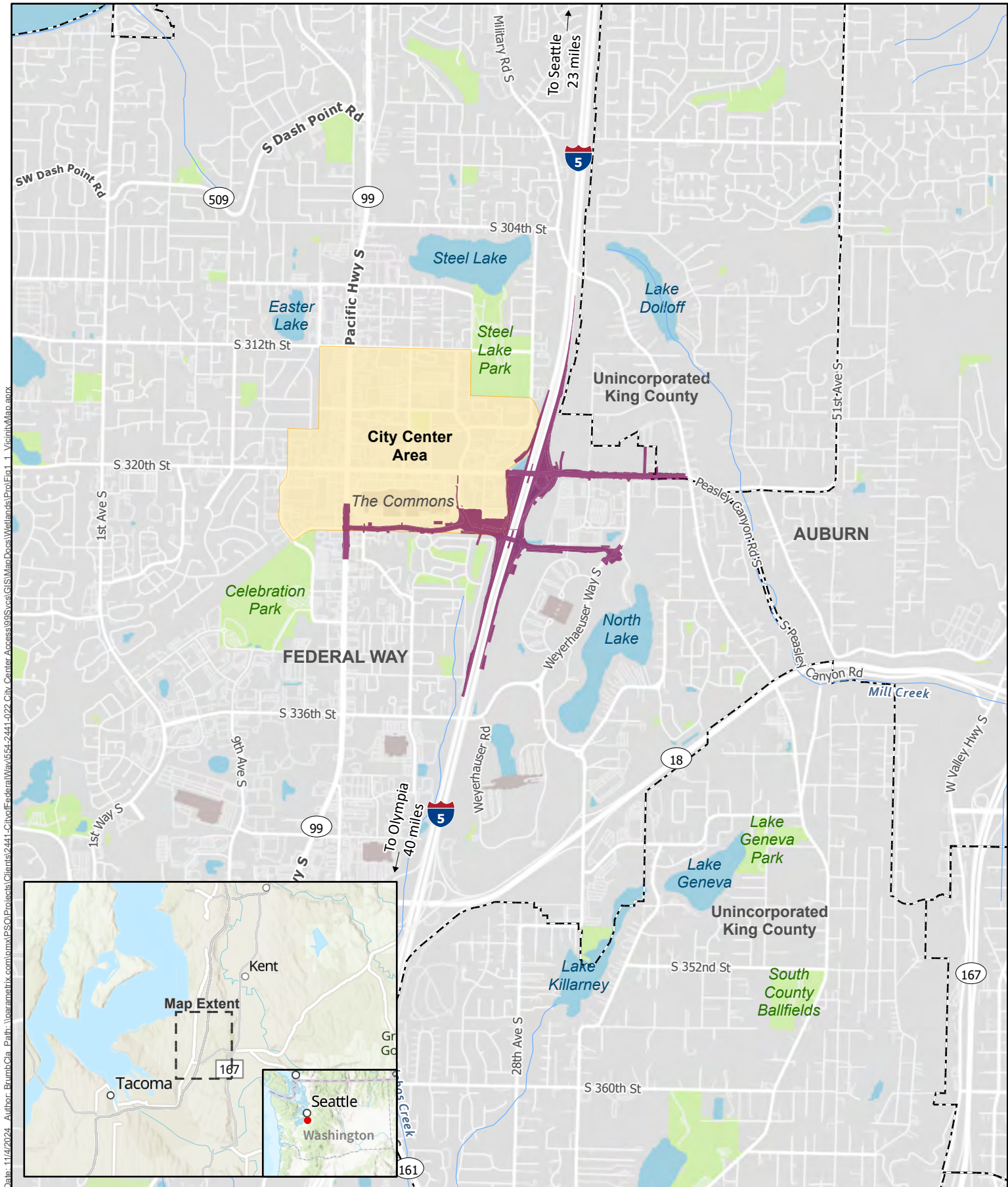
The S 324th Street Interchange Alternative 2I (Grade Separated Ramps Plus Roundabouts at S 324th Street) was identified as the alternative that best meets the purpose and need of the project. Alternative 2I was recommended to the Federal Way City Council in November 2019, based on the results of alternatives analysis screening, and the City Council agreed to move forward with the alternative.

Below is a description of the elements included in the Preferred Alternative. This description is based on the preliminary design, and it is subject to change as design progresses.

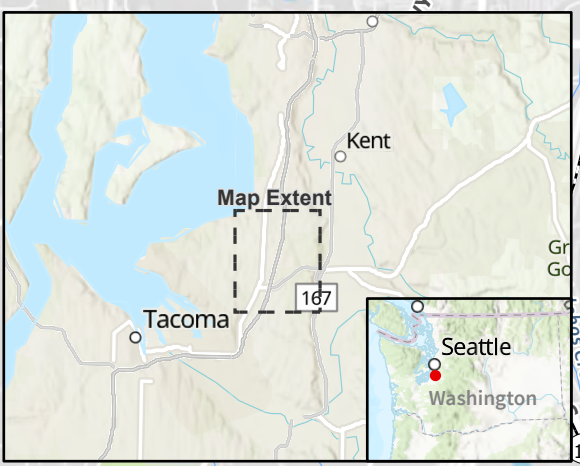
1.1.3.1 Access Modifications

The Preferred Alternative includes a modified interchange at S 320th Street, with braided ramps and new access at S 324th Street. There are no new gore points along I-5, but the existing gore points north and south of the S 320th Street interchange will be relocated. The northbound off-ramp gore will move 2,100 feet south, the northbound on-ramp gore will move 150 feet north, the southbound off-ramp gore will move 550 feet north, and the southbound on-ramp gore will move 2,200 feet south.

All on-ramps from S 320th Street and S 324th Street will be metered. They will not include HOV bypasses.



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- City Boundary
- City Center Area
- Project Footprint

Figure 1-1
 Vicinity Map
 Federal Way City Center Access
 Project: Ecosystems Report
 Federal Way, WA

1.1.3.2 S 324th Street Roadway Improvements

The Preferred Alternative includes a new two-lane bridge along S 324th Street, crossing I-5, and roundabouts at the ramp terminals. Both ramp terminals will have single-lane roundabouts with slip lanes in the northwest and southwest quadrants of the S 324th Street/I-5 southbound ramps intersection.

West of the new S 324th Street interchange, S 324th Street will be five lanes from SR 99 to 23rd Avenue S and four lanes from 23rd Avenue S to I-5 southbound ramps. There will be a two-lane roundabout at the S 324th Street/23rd Avenue S intersection. The Preferred Alternative also includes intersection improvements at S 324th Street/SR 99 that will help manage westbound queues from the new interchange, including an additional southbound left-turn lane and an additional northbound left-turn lane.

The City is working with the Central Puget Sound Transit Authority (Sound Transit), Bonneville Power Administration (BPA), and other stakeholders to develop a S 324th Street/23rd Avenue S roundabout design that accommodates existing site constraints and future improvements. BPA's transmission tower relocations surrounding the intersection will be designed to accommodate the proposed Sound Transit Operations and Maintenance Facility (OMF) South project and project improvements.

East of the new S 324th Street interchange, S 324th Street will be three lanes from I-5 northbound ramps to Weyerhaeuser Way S. There will be a single-lane roundabout at S 324th Street/Weyerhaeuser Way S.

1.1.3.3 S 320th Street Roadway Improvements

There are currently HOV lanes in both directions along S 320th Street between SR 99 and 20th Avenue S. The Preferred Alternative for this project includes HOV lanes on S 320th Street in both directions between 20th Avenue S and Military Road to support future bus rapid transit (BRT) along S 320th Street, which is an element of the King County Metro long-range plan. Between 20th Avenue S and the I-5 southbound ramps, a general-purpose lane in each direction will be converted to an HOV lane. Crossing I-5 between I-5 southbound ramps and I-5 northbound ramps, the S 320th Street bridge will be replaced and widened to include a new HOV lane in both directions and a lengthened left-turn lane for the I-5 southbound on-ramp. Between I-5 and Military Road, S 320th Street will be widened to accommodate the added HOV lanes.

1.1.3.4 Nonmotorized Improvements

The Preferred Alternative includes nonmotorized improvements on both S 324th Street and S 320th Street. Between SR 99 and Weyerhaeuser Way, there will be a shared-use path on the north side of S 324th Street and a sidewalk on the south side of S 324th Street. There is potential for the shared-use path to connect to the BPA Trail in the future. A shared-use path on the west side of 23rd Avenue S between S 324th Street and S 320th Street is included. The S 320th Street bridge crossing I-5 will have sidewalks on the north and south side. Between I-5 northbound ramps and Military Road S, there will be sidewalks on the north and south side.

1.1.3.5 Correction of Fish-Passage Barriers

To comply with a federal injunction requiring the state of Washington to correct fish barriers in WRIAs 1 through 23 (United States et al. vs. Washington et al. No. C70-9213 Subproceeding No. 01-1, dated March 29, 2013), three existing crossings conveying East Fork Hylebos Creek –

Tributary 0016A through the project limits will be corrected. All three have been identified as fish barriers by WDFW and the WSDOT Environmental Services Office (Site IDs 995300, 995299, and 992364). One crosses I-5 at the south end of the S 320th Street interchange ramps, one is located under the northbound on-ramp, and one is under the northbound off-ramp. A fourth privately owned culvert (WDFW culvert ID 420614) under Winged Foot Way that connects to culvert ID 992364 will also be corrected.

1.1.3.6 Design Compatibility

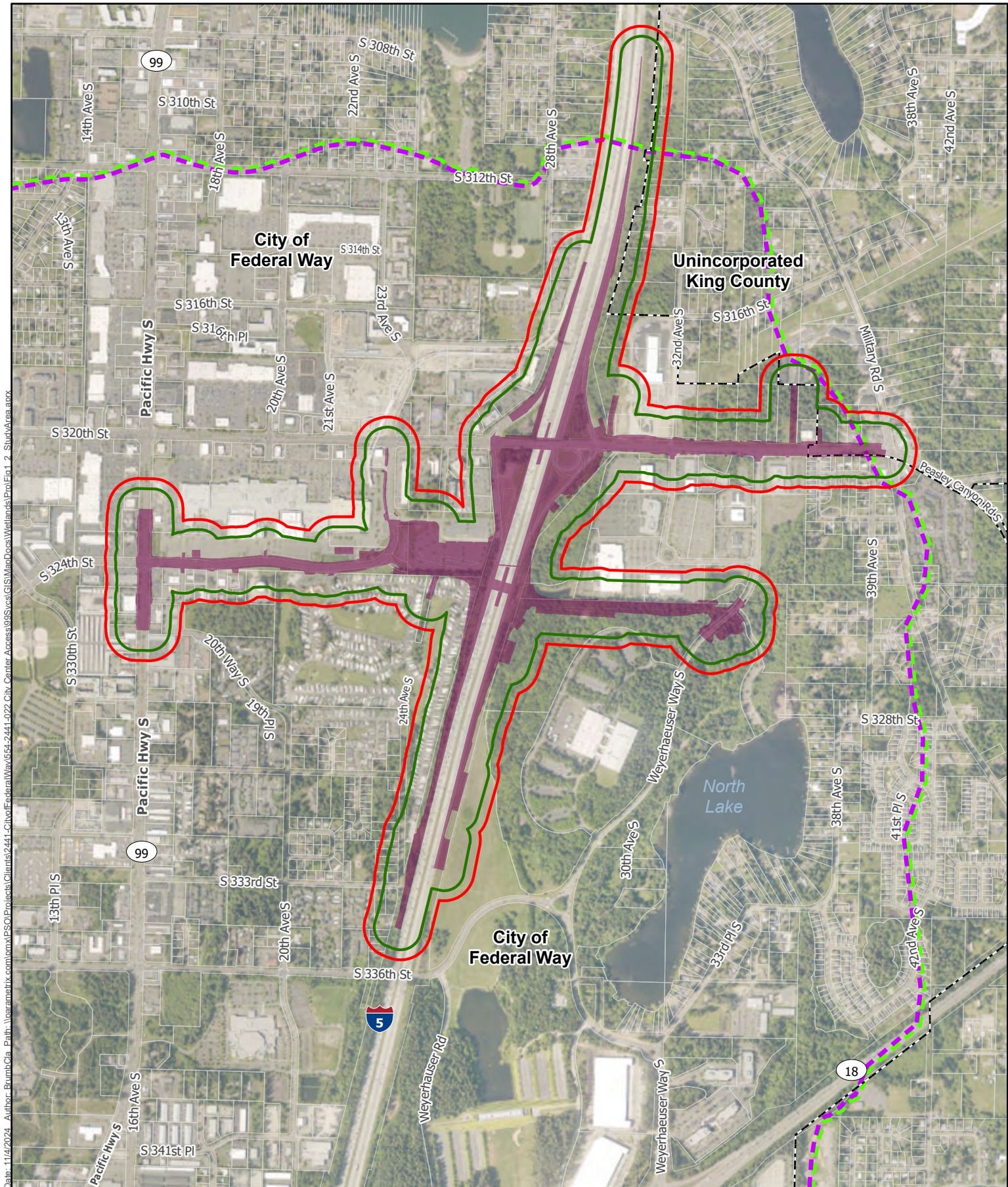
The Preferred Alternative design accommodates the Sound Transit Federal Way Link Extension (FWLE) and OMF South projects, BPA transmission tower relocations, and the future widening of I-5. The Sound Transit FWLE and OMF South WSDOT Compatibility Reports establish the WSDOT Compatibility Line, which the project must adhere to. Other design constraints and considerations include avoiding impacts to the existing bog and minimizing impacts to the BP 14-inch Olympic Pipeline, King County Metro park and ride, and adjacent development. The roadway design incorporates input received from the City, WSDOT, and Sound Transit during design coordination meetings and submittal reviews. Input to design also involved meeting with adjacent commercial and residential developments and WDFW regarding North Lake Access.

1.2 Study Areas

The project footprint consists of construction limits or the largest extents in which clearing, grading, and construction access would occur. The study area for wetland and streams extends 300 feet outward from the edge of the proposed construction limits (Figure 1-2), which include the following:

- I-5 between milepost (MP) 143 and MP 144, including those access ramps serving S 320th Street at Exit 143.
- S 320th Street between 23rd Avenue S to the west and Military Road S to the east.
- S 324th Street from SR 99 to the west to Weyerhaeuser Way S to the east.
- 23rd Avenue S from S 324th Street to the north approximately 500 feet to S 320th Street.
- Those areas between S 324th Street and Weyerhaeuser Way S that are on portions of King County Parcel Nos. 7622400021, 7978200526, 2154650170, 1621049056, 2154650180, 1621049036, and 7978200520.
- Culvert inlets and outlets of four crossings: below the I-5 northbound on-ramp (Site ID 995300), below S 320th Street (Site ID 995299), below I-5 (Site ID 992364), and below a privately owned culvert under Winged Foot Way (Site ID 420614).

The study area for vegetation and wildlife habitat consists of the project footprint plus areas within 200 feet of the footprint. For wildlife, the study area includes areas where project construction could affect species that use habitats in the area as well as habitat quality. The occurrence of sensitive wildlife species was also documented within 0.25 miles of the project footprint to include species that could potentially be affected by airborne noise and human activity.



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Paramatrix

Source: King County,
City of Federal Way



0 250 500 1,000
Feet

- Project Footprint
- WRIA 9
- WRIA 10
- Parcel Boundary

- Wetland and Stream
Study Area (300 feet)
- Vegetation and
Wildlife Habitat
Study Area (200 feet)

Figure 1-2
Study Area

Federal Way City Center Access
Project: Ecosystems Report

Federal Way, WA

2. Methods

This section describes methods used to evaluate wetland, aquatic, and vegetation and wildlife resources in the study area.

2.1 Review of Existing Information

The following data sources were reviewed for information on precipitation, topography, drainage patterns, soils, vegetation, and potential or known wetlands and streams in the study area:

- Natural Resources Conservation Service (NRCS) Climate Data for King County, Station Seattle Tacoma Airport, Washington (NRCS 2024a) (Appendix A-1 and A-2).
- U.S. Geological Survey Digital Raster Graphics topographic maps (USGS 2024) (Appendix A-3).
- National Wetlands Inventory (maps) (USFWS 2024a) (Appendix A-4).
- NRCS, Soil Survey of King County Washington (NRCS 2024b) and Washington State Hydric Soils (NRCS 2024c) (Appendix A-5).
- Federal Way Critical Areas Map (Federal Way 2016) (Appendix A-6).
- King County iMap Wetlands Inventory Map (King County 2018) (Appendix A-7).
- Mapped wetlands within the Woodbridge Business Park (Talasaea 2020).
- Priority Habitats and Species data (WDFW 2024c).
- Washington State Department of Natural Resources Natural Heritage Program database (WDNR 2024).
- OMF South wetland and stream data (data-sharing agreement with Sound Transit).

2.2 Wetland Resources

Evaluation of wetlands within the study area includes several sources: delineation and remote identification by project biologists; incorporation of data from delineations for Weyerhaeuser Corp (Talasaea 2020); and data from Sound Transit OMF South project, as part of a data-sharing agreement with Sound Transit.

For identification of wetland resources by project biologists, wetlands were either delineated on-site or mapped remotely. Wetlands within the study area where right of entry was not granted were estimated using lidar and aerial imagery. To support future design and environmental permitting, wetland boundaries will be delineated on-site where right of entry was not obtained for this current study. Wetlands within the study area where right of entry was granted were delineated using routine methods described in the following:

- Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987).
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010).

Wetland boundaries were delineated based on on-site observations of vegetation, soils, and hydrology, in conjunction with background information listed above.

Wetlands were classified using the U.S. Fish and Wildlife Service (USFWS) classification system (FGDC 2013) and the Hydrogeomorphic Classification System (HGM) (Brinson 1993). Wetlands were rated using the Washington State Wetland Rating System for Western Washington – 2014 Update (Version 2) (Hruby and Yahnke 2023), as required under both Federal Way Revised Code (FWRC) 19.145.420(1) and King County Code (KCC) 21A.24.318. Scientific plant names and wetland indicator status in this report are from the U.S. Army Corps of Engineers (USACE) National Wetland Plant List, Version 3.3 (USACE 2020).

Federal Way’s wetland buffers, as described in FWRC 19.145.420, were applied to the wetlands in the project where they occur within the City limits. Buffer widths within Federal Way range from 50 to 300 feet, depending upon the wetland rating and habitat score.

King County’s wetland buffers, as described in KCC 21A.24.325, were applied to the single wetland (W14) within the study area which occurs within unincorporated King County. Buffer widths within unincorporated King County range from 25 to 300 feet, depending on wetland rating, habitat score, and intensity of adjacent land use impacts.

Wetlands in the study area were given unique identifiers using “W” for wetland plus a number (e.g., W1).

2.3 Aquatic Resources

Aquatic resources include aquatic species and habitat that may be affected by the project. This includes the identification of streams, aquatic species protected by the Endangered Species Act (ESA), and fish and wildlife habitat conservations areas regulated by Federal Way (FWMC 19.145.260) as well as aquatic areas regulated by King County (KCC 21A.24.355).

The ordinary high-water mark (OHWM) of the stream within the study area was delineated using USACE guidance for OHWM identification (USACE 2005; USACE 2014). Fish presence is assumed, based on available WDFW Fish Passage Inventory (WDFW 2024a), fish distribution data (WDFW 2024c; NWIFC 2024), and on-site observations by project biologists. Biologists classified streams according to the interim water typing definitions in Washington Administrative Code 222-16-031 and Federal Way code. Federal Way’s stream buffer widths, as described within FWRC 19.145.270, were applied to streams in the project.

2.4 Vegetation and Wildlife Resources

Terrestrial vegetation and wildlife resources were identified by reviewing existing conditions and regulatory status of plants and animals that may be affected by the project. This includes identification of species and habitat protected by the ESA, and fish and wildlife habitat conservations areas, as regulated by Federal Way (FWRC 19.145.260), and wildlife conservation areas, as regulated by King County (KCC 21A.24.382).

Vegetation cover types were assessed within 200 feet of the project footprint using aerial photography and on-site observations in the field and include the following:

- Upland mature forest: meets criteria for Mature Forest priority habitat by WDFW, in which mature stands are over 80 years old, have trees exceeding a diameter of 21 inches, and contain high structural complexity. Some mature forests include riparian habitats adjacent to streams and wetlands. Habitat value for terrestrial species is very high. It would take decades to recover this habitat following disturbance.
- Upland young forest: forest dominated by native trees and other plants but does not exhibit size and/or habitat complexity as seen in a mature native forest. Some upland forests

include riparian habitats adjacent to streams and wetlands. Habitat value for terrestrial species is high. It would take years to decades to recover this habitat following disturbance.

- Shrublands: dominated by shrub species, which may provide habitat for birds and small mammals. Recovery following disturbance could take months to years.
- Upland grasslands: dominated by upland grasses and other herbaceous species and often regularly mown in road right-of-way. Grasslands provide habitat for a number of bird and small mammal species, and recovery after disturbance could take weeks to months.
- Wetland/stream: areas where wetlands and streams were identified. Wetlands and streams provide habitat for terrestrial and aquatic species. It would take months to decades to recover from disturbance, depending on the type of wetland vegetation present (emergent, scrub-shrub, or forested).
- Commercial: consists of heavily developed areas, such as buildings, parking lots, and roads, and their associated landscaped areas. Commercial areas provide habitat for birds and small mammals adapted to urban environments, but overall, they have low habitat value.
- Stormwater pond: created ponds with fluctuating water levels and regular maintenance results in low habitat value.

2.5 Impact Assessment

The impact analysis describes the magnitude and duration of impacts on wetlands, aquatic resources, and vegetation and wildlife. Temporary construction-related impacts are impacts from clearing and grading activities, access areas by machinery, and staging areas that can be restored within 1 to 2 years following disturbance. For this analysis, a full removal of vegetation for construction activities is assumed. Temporary, construction-related impacts that last longer than 1 to 2 years or require the removal of mature or old-growth trees may be considered permanent impacts, even if the area will be replanted. Permanent impacts include operational impacts on resources. Direct impacts on wetlands, streams, and vegetation were determined quantitatively by measuring the acreage where resources would be altered or eliminated. Wetlands where at least one half of the area would be permanently impacted were counted as fully impacted. Impacts on species were assessed qualitatively by analyzing the project's impacts on overall habitat quality.

Determination of whether the impacts to wetlands, aquatic resources, and vegetation and wildlife is significant is based on whether the project can practicably apply the mitigation sequencing requirement as defined by USACE (33 Code of Federal Regulations [CFR] 325/332) and the Environmental Protection Agency (EPA) (40 CFR 230), the Washington State Department of Ecology (Ecology)(WAC 197-11-768), and City of Federal Way (FWC 19.145.130). Mitigation sequencing as defined by Federal Way (FWC 19.145.130) is:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts;
3. Rectifying the impact to the critical area by repairing, rehabilitating, or restoring the affected environment to the conditions existing at the time of initiation of the project;
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;

5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and
6. Monitoring the hazard or other required mitigation and taking remedial action when necessary.

See Section 5 for project specific description of mitigation sequencing requirements.

3. Existing Conditions

3.1 Landscape Setting

The study area is located within the Puget Sound lowlands and near Federal Way's City Center. It is centered on the I-5 freeway corridor (Figures 1-1 and 1-2). The project is located on a topographic ridge, with most of the project occurring in WRIA 10 (Puyallup/White) and a small portion of the project occurring WRIA 9 (Green/Duwamish). The study area is in a highly urbanized land-use area that includes commercial, light industrial, office, residential, and recreational uses. Patches of relatively undisturbed forest occur east of I-5, both north and south of S 320th Street.

3.2 Watershed Description

The project is largely located in the Hylebos Creek – Frontal Commencement Bay watershed (hydrologic unit code [HUC] 171100190205) of WRIA 10: Puyallup/White, with a small portion along the eastern edge of the project, near the S 320th Street intersection with Military Road, extending into the Green River watershed (HUC 1711003130305) within WRIA 9: Green/Duwamish. The project falls within USDA MLRA 2 and USDA LRR A.

While the project is mapped in both WRIA 9 (Green/Duwamish) and WRIA 10 (Puyallup/White), surface flow in the study area appears to enter only aquatic ecosystems in WRIA 10 (Puyallup/White). None of the observed aquatic ecosystems identified in WRIA 9 (Green/Duwamish) drain towards the Green/Duwamish waterway or its tributaries. Therefore, discussion herein will be focused on aquatic ecosystems in WRIA 10 (Puyallup/White) and, more specifically, the Hylebos Creek basin.

The Hylebos Creek basin is heavily developed, and it includes several reaches downstream and within other tributaries that are impaired by dissolved oxygen, bacteria, mercury, temperature, copper, lead, zinc, and pH (Ecology 2024). Hylebos Creek drains to Commencement Bay near the Port of Tacoma, where there is an approved total maximum daily load water quality plan established to control dioxin. Major land uses within the Hylebos Creek basin include heavy and light industrial, commercial, office, and residential.

3.3 Climate, Precipitation, and Growing Season

According to the Climate Analysis for Wetlands Tables for the Seattle-Tacoma Airport Weather Station (NRCS 2020a), the average mean temperature for the 30-year period between 1991 and 2020 was 53.7 °F, falling within an average range of 46.1 °F to 61.3 °F. The growing season (28 °F or greater) has a 50% probability of occurring between February 8 and December 14 (309 days). Therefore, all fieldwork occurred during the growing season (Appendix A-1).

The Regional Delineation Supplement Version 2.0 (USACE 2010) recommends using the methods described in Chapter 19 in the Engineering Field Handbook (NRCS 2015) to determine whether precipitation occurring in the 3 full months prior to the site visit was normal, drier than normal, or wetter than normal. The actual rainfall for the 3 months prior to field work ranged from drier to wetter than normal based on the 30-year average from 1991 through 2020. Light precipitation was recorded in the 10 days preceding each field work session: April 30, 2019; July 24, 2020; August 13, 18, and 19, 2020; September 2, 2020; November 11, 2020; and January 7 and 11, 2021 (Appendix A-2).

3.4 Wetlands

3.4.1 Overview

A total of 32 wetlands were identified throughout the study area. Wetland identification field work occurred between April 2019 and May 2021. Parametrix mapped 16 wetlands in the study area. Figures 3-1 through 3-17 present the wetland locations mapped by project biologists, mapping data from previous work (Talasaea 2020), data from the data-sharing arrangement with the OMF South project, and estimated boundaries observed from adjacent roadways. W6, W15, W21, W22, W23, W25, W26, W27, W28, W29, W30 were delineated by the OMF South project between 2019 and 2023. Wetlands W31, W32, W33, and W34 were mapped previously by Talasaea Consultants Inc. (Talasaea 2020), and boundaries were verified by project biologists. Wetland classifications, ratings, and buffers are summarized below in Table 3-1.

Table 3-1. Wetlands Within the Study Area

Wetland	Wetland Classification			Total Wetland Acreage	Total Wetland Area (sf)	Buffer Width (ft) ^d
	USFWS Class ^a	HGM Class ^b	Ecology Rating ^c			
W1	PEM, PSS	Slope, Depressional	IV	0.16	7,120	50
W2	PEM, PSS	Depressional	III	0.03	1,255	80
W3	PEM	Depressional	III	0.02	670	80
W5	PEM, PSS, PFO	Slope, Depressional, Riverine	I/II	1.76 (bog), 4.50 (lagg ^g)	76,465 (bog), 195,930 (lagg)	250/150
W6 ^e	PEM, PSS	Riverine	III	0.19	8,130	80
W7	PEM	Depressional	III	0.18	7,930	80
W9	PEM	Slope	III	0.01	555	80
W10	PAB, PEM, PSS, PFO	Depressional	III	0.23	9,890	80
W11	PAB, PEM, PSS, PFO	Depressional	II	5.09	221,925	150
W12	PEM	Depressional	IV	0.20	8,875	50
W13	PEM, PSS, PFO	Depressional	II	0.45	19,630	100
W14	PSS, PFO	Depressional	III	0.26	11,475	80
W15 ^e	PEM, PSS	Depressional	III	0.40	17,585	80
W17	PFO	Depressional	III	0.13	5,500	80
W18	PAB, PSS, PFO	Depressional, Lake Fringe	II	13.08	569,640	150
W19	PAB, PEM, PSS, PFO	Depressional, Lake Fringe	II	15.25	664,350	150
W20	PEM	Slope	IV	0.17	7,295	50
W21 ^e	PEM, PFO	Depressional	III	0.34	14,720	80
W22 ^e	PFO	Riverine	III	0.95	41,580	80

Table 3-1. Wetlands within the Project Study Area (continued)

Wetland	Wetland Classification			Total Wetland Acreage	Total Wetland Area (sf)	Buffer Width (ft) ^d
	USFWS Class ^a	HGM Class ^b	Ecology Rating ^c			
W23 ^e	PSS, PFO	Riverine	II	0.38	16,765	150
W26 ^e	PFO	Riverine	III	0.10	4,425	80
W27 ^e	PEM, PSS	Riverine	III	0.13	5,750	80
W28 ^e	PSS	Slope	IV	0.02	760	50
W29 ^e	PEM, PSS	Depressional	III	0.03	1,220	80
W30 ^e	PEM, PSS, PFO	Riverine	III	0.63	27,255	80
W31 ^f	PEM	Slope	IV	0.07	3,200	50
W32 ^f	PFO	Depressional	III	0.08	3,660	80
W33 ^f	PSS	Depressional	III	0.17	7,530	80
W34 ^f	PFO	Depressional	III	0.01	390	80

ft = feet; Ecology = Washington State Department of Ecology; HGM = Hydrogeomorphic Classification System; sf= square feet; USFWS = U.S. Fish and Wildlife Service.

^a PAB = palustrine aquatic bed; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrub-shrub (FDGC 2013; Cowardin et al. 1979).

^b Brinson et al. 2005.

^c Hruby and Yahnke 2023.

^d Federal Way wetland buffer width based on wetland category, habitat score, and wetland size (FWRC 19.145.420). W14 is in unincorporated King County and buffer widths are based on wetland category, habitat score and intensity of adjacent land use (KCC 21A.24.325). Assigned buffer widths based on high intensity land use.

^e Wetland boundary and wetland rating from OMF South.

^f Wetland boundary and wetland rating from Talasaea (2020).

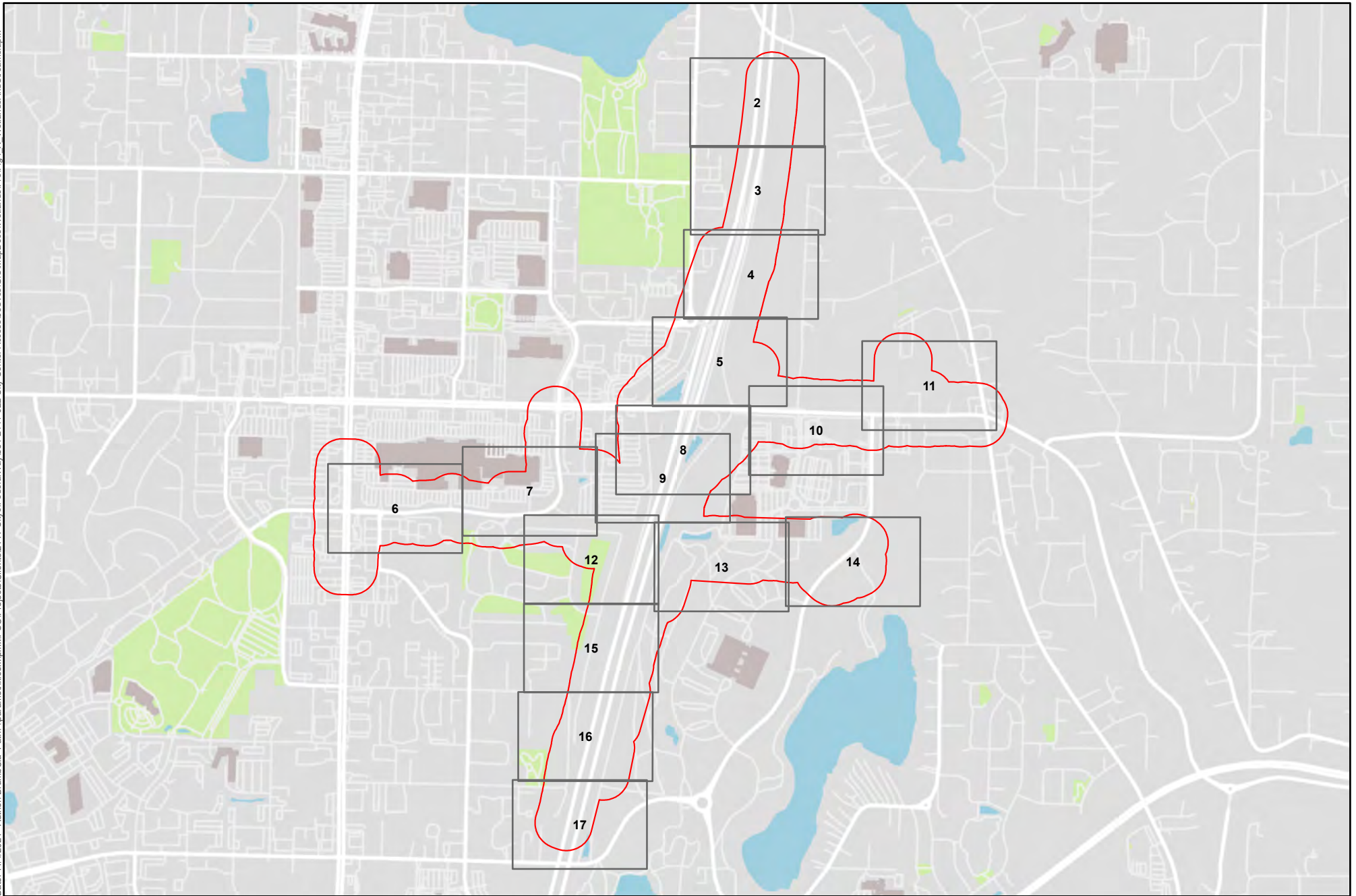
^g A lagg is the peripheral moat wetland area surrounding the peatland bog.

Nine wetlands are associated with East Fork Hylebos Creek Tributary 0016A: W5, W6, W10, W11, W22, W23, W26, W27, and W30. W11 and W10 are the headwaters of the East Fork Hylebos Creek Tributary 0016A. W5 is a large wetland containing a peatland bog vegetation community.

Detailed information on each wetland evaluated by project biologists is provided in Appendix B. Wetland delineation data sheets and rating forms are provided in Appendix C and D, respectively. Photographs of the wetlands are included in Appendix E.

Additionally, several constructed stormwater ponds and other facilities identified within the study area are included for context (Figures 3-1 through 3-17). As these stormwater ponds and features are artificial and were constructed for the express purposes of conveying, storing, and treating stormwater, they are not regulated wetlands.

Date: 11/14/2024 Author: BrumbCia Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-022 City Center Access\99Srvs\GIS\MapDocs\Wetlands\PolFig4_X_WetlandsAndStreams.aprx



Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 400 800 1,600
US Feet

□ Page Extent

Figure 3-1

Existing Conditions

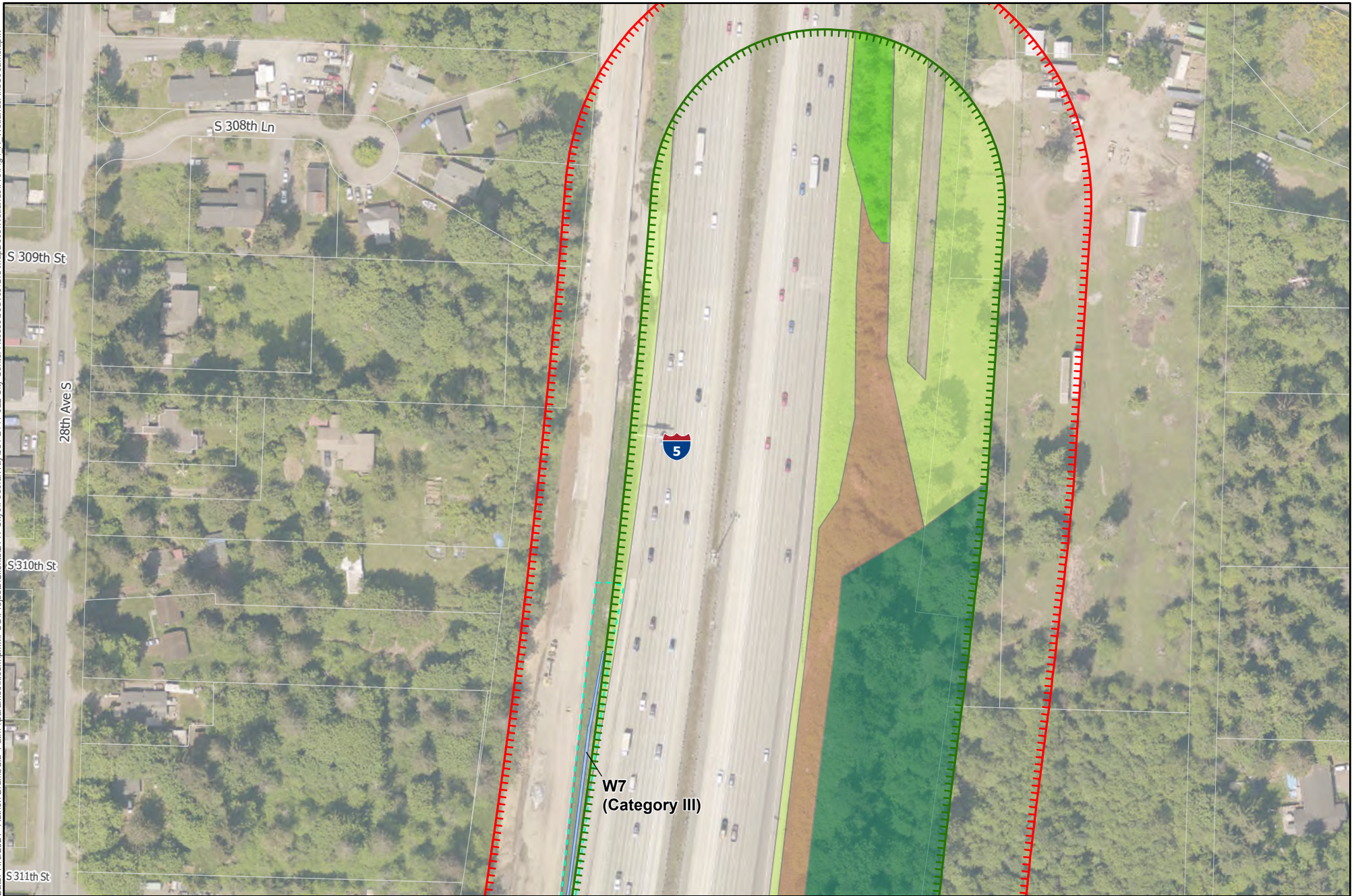
Federal Way City Center Access

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Federal Way, WA

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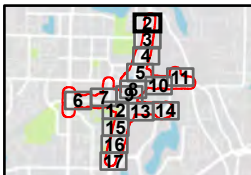


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100
Feet



- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area
- Wetland Buffer
- Wetland
- Parcel Boundary

- Commercial/Residential
- Shrublands
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

Figure 3-2
Existing Conditions
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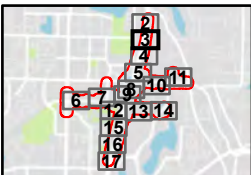



Parametrix


Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100 Feet




 Wetland and Stream Study Area


 Vegetation and Wildlife Study Area


 Parcel Boundary

 Wetland Buffer

 Wetland

 Commercial/Residential

 Shrublands

 Upland Grassland

 Upland Mature Forest


 Upland Young Forest

Figure 3-3
Existing Conditions
Federal Way City Center Access
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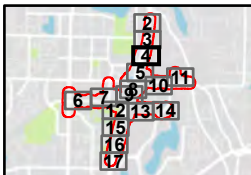



Parametrix


Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap




0 25 50 100
Feet




 Wetland and Stream Study Area


 Vegetation and Wildlife Study Area

 Parcel Boundary

 Wetland Buffer

 Wetland

 Commercial/Residential

 Upland Grassland

 Upland Mature Forest


 Upland Young Forest

Figure 3-4

Existing Conditions

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Federal Way, WA

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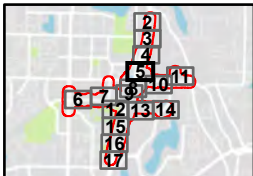


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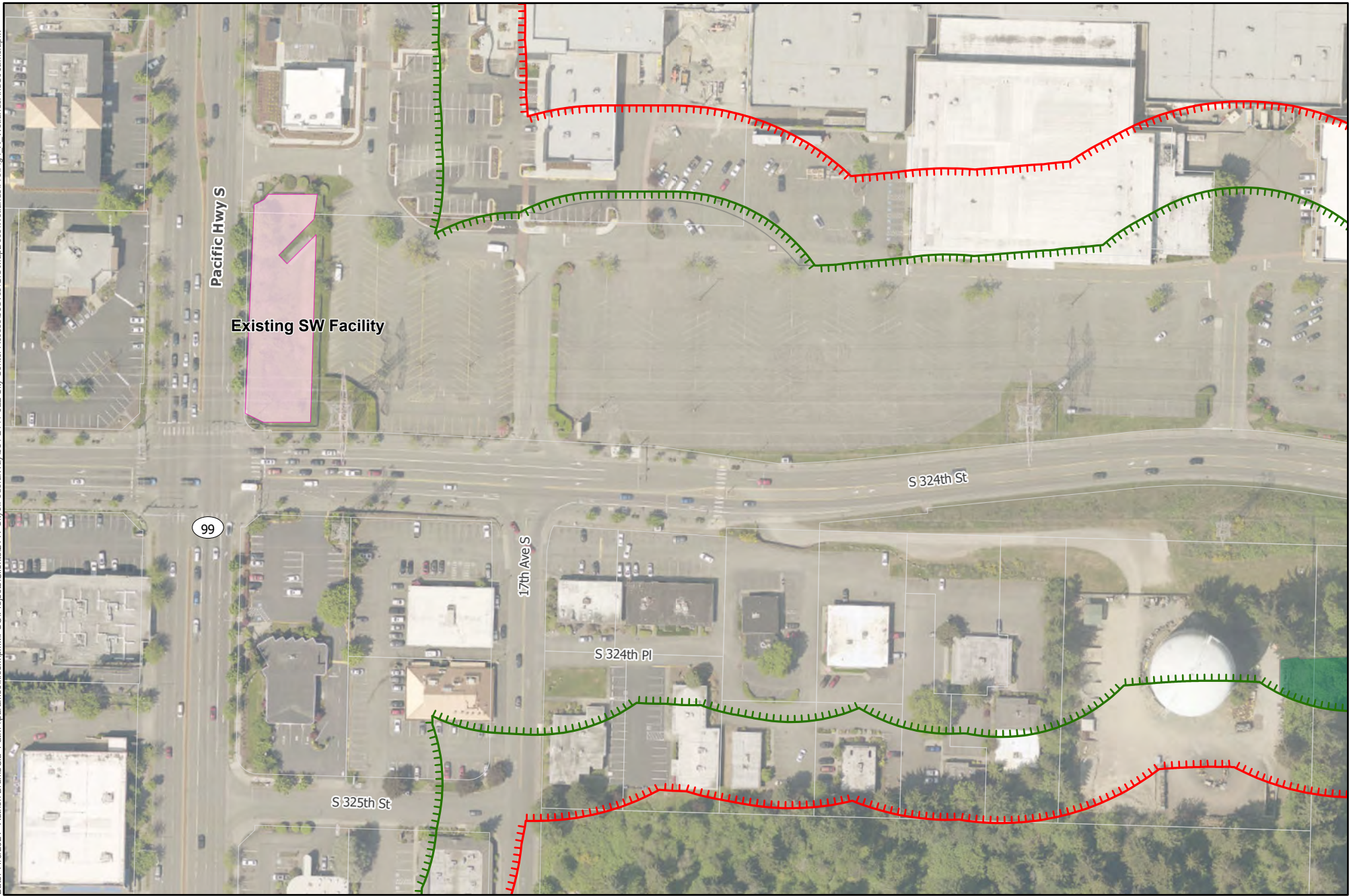
0 25 50 100 Feet



- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area
- Parcel Boundary
- Stream (Pipe)
- Stormwater Pipe
- Stormwater Feature
- Wetland
- Wetland Buffer

- WDFW Culvert ID
- Commercial/Residential
- Shrublands
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

Figure 3-5
Existing Conditions
Federal Way City Center Access
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Federal Way, WA

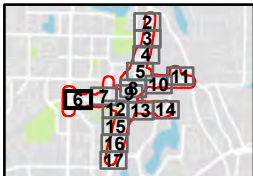



Parametrix


Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap





0 25 50 100 Feet




 Wetland and Stream Study Area

 Vegetation and Wildlife Study Area

 Parcel Boundary

 Stormwater Feature

 Commercial/Residential


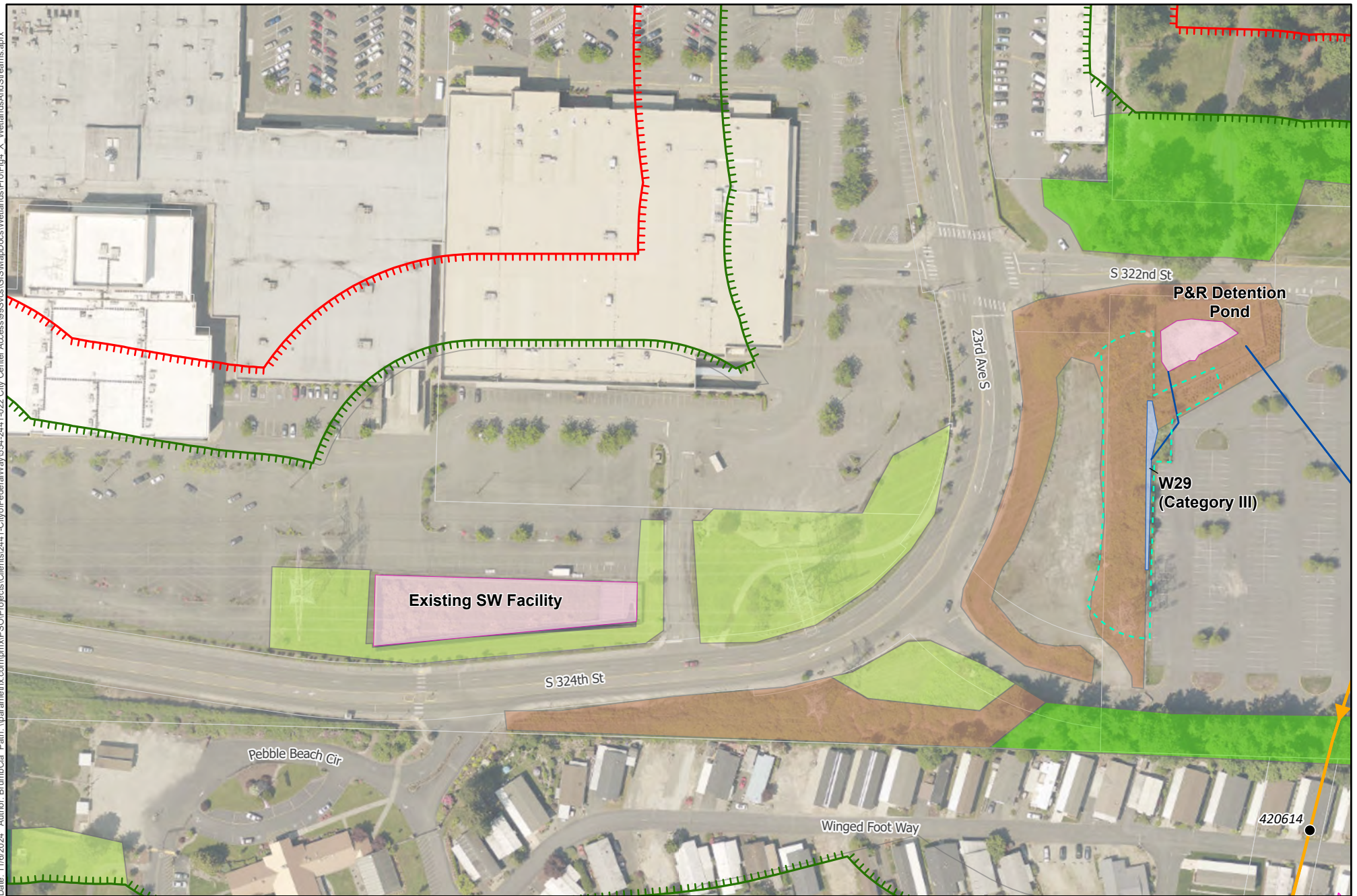
 Upland Mature Forest

Figure 3-6
Existing Conditions
Federal Way City Center Access
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Federal Way, WA

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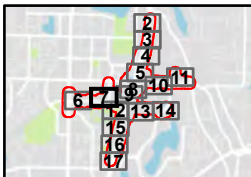


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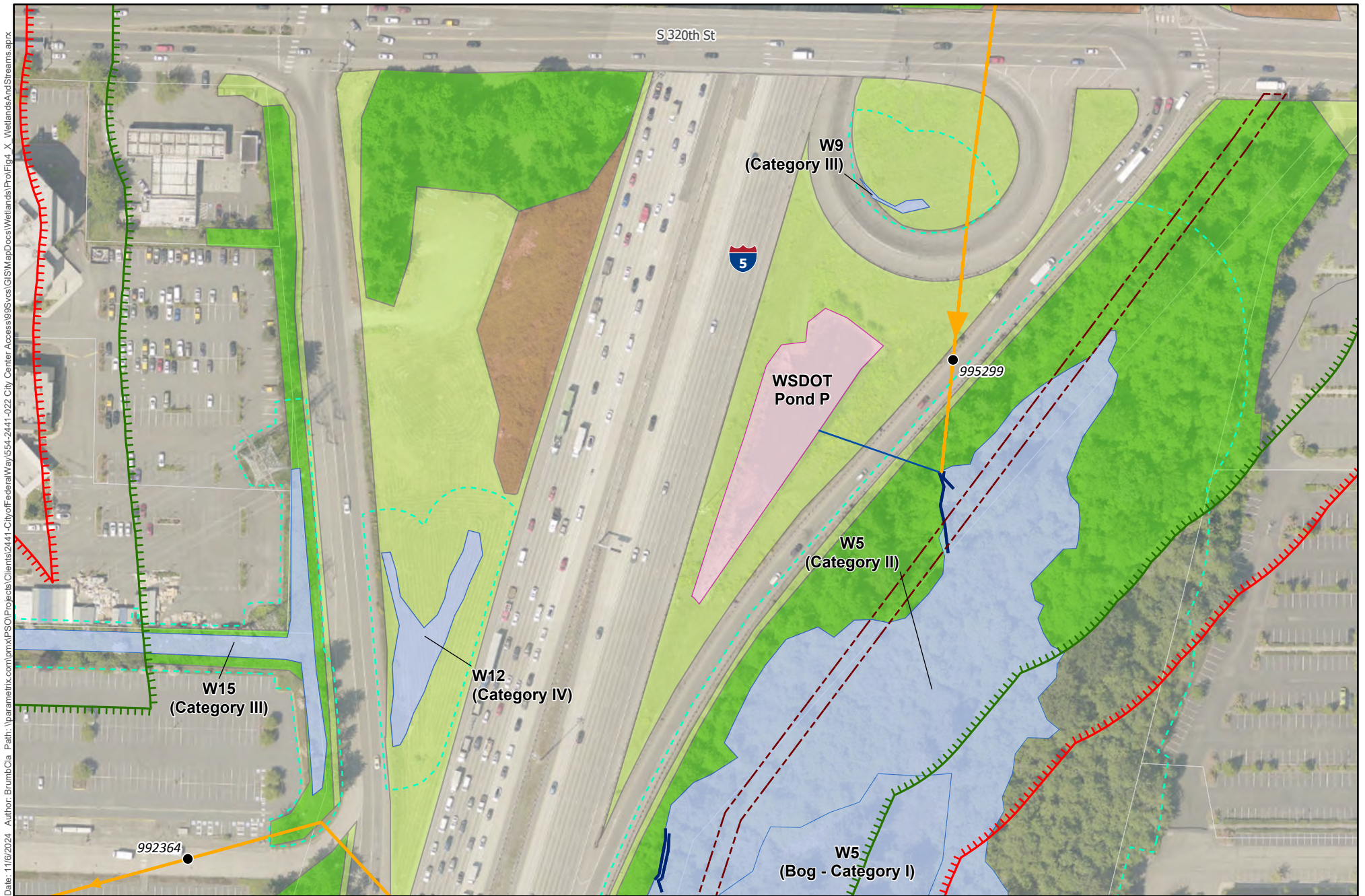
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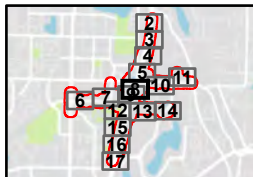
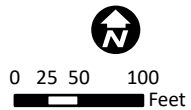
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|------------------------------------|--------------------|------------------------|
| Wetland and Stream Study Area | Stream (Pipe) | WDFW Culvert ID |
| Vegetation and Wildlife Study Area | Stormwater Pipe | Commercial/Residential |
| Parcel Boundary | Wetland Buffer | Shrublands |
| | Stream Buffer | Upland Grassland |
| | Stormwater Feature | Upland Mature Forest |
| | Wetland | Upland Young Forest |

Figure 3-7

Existing Conditions
Federal Way City Center Access
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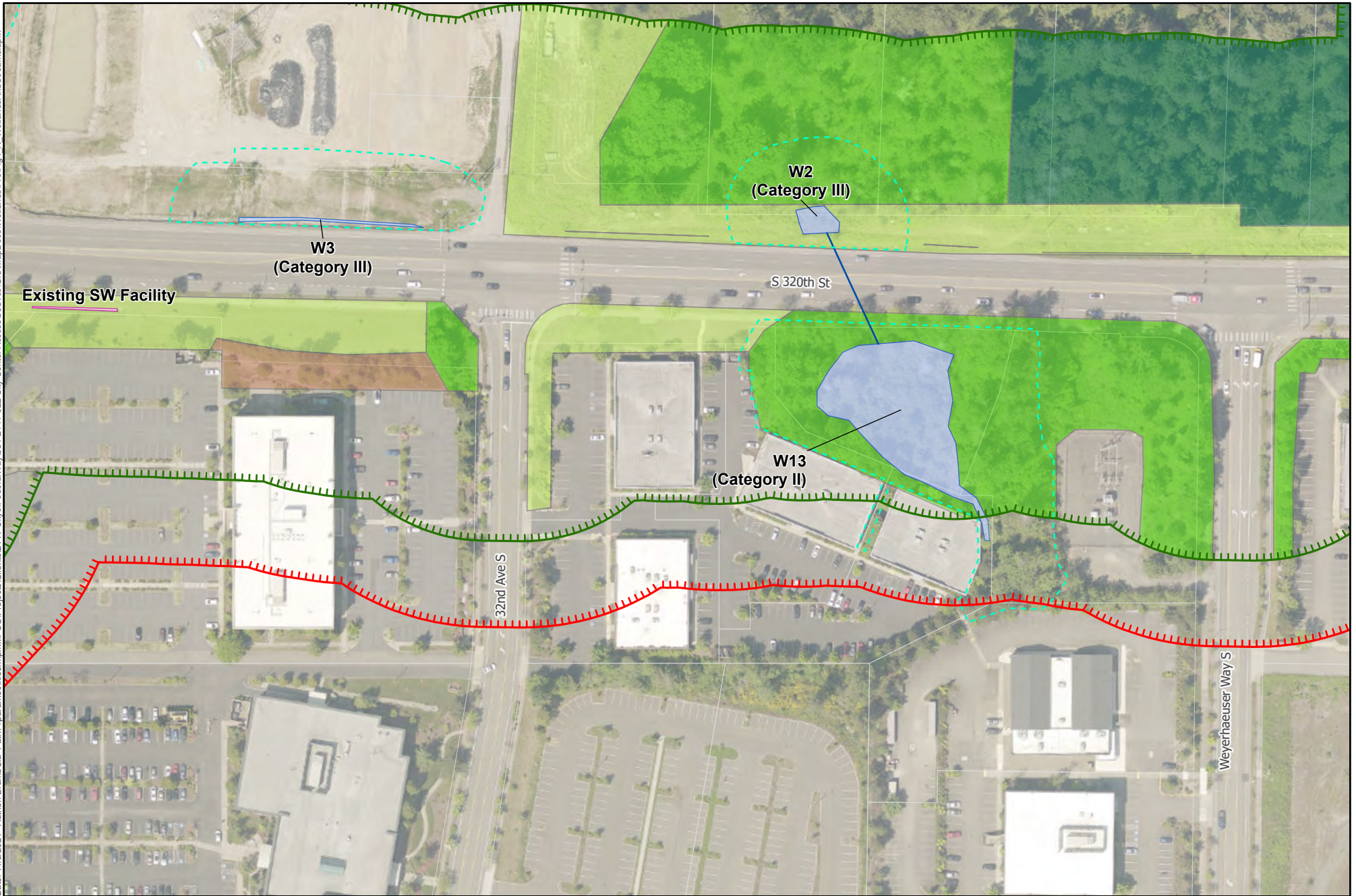
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- | | | |
|------------------------------------|--------------------|------------------------|
| Wetland and Stream Study Area | Stream (Pipe) | WDFW Culvert ID |
| Vegetation and Wildlife Study Area | Stormwater Pipe | Commercial/Residential |
| Parcel Boundary | Stream | Shrublands |
| Olympic Pipeline Easement | Wetland Buffer | Upland Grassland |
| | Stormwater Feature | Upland Young Forest |
| | Wetland | |

Figure 3-8
 Existing Conditions
 Federal Way City Center Access
 Project: Ecosystems Report
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 Federal Way, WA

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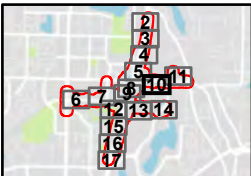


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0 25 50 100 Feet



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|------------------------------------|--------------------|------------------------|
| Wetland and Stream Study Area | Stormwater Pipe | Commercial/Residential |
| Vegetation and Wildlife Study Area | Wetland Buffer | Shrublands |
| Parcel Boundary | Stormwater Feature | Upland Grassland |
| | Wetland | Upland Mature Forest |
| | | Upland Young Forest |

Figure 3-10
Existing Conditions
Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA

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Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100
Feet



- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area
- Parcel Boundary

- Wetland Buffer
- Wetland

- Commercial/Residential
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

Figure 3-11
Existing Conditions
Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA

Date: 11/6/2024 Author: BrumbyCla Path: \\parametrix.com\proj\PSO\Projects\Clients\2441-City of Federal Way\554-2441-022 City Center Access\905\res\GIS\MapDocs\Wetlands\ProjFig4_X_WetlandsAndStreams.aprx

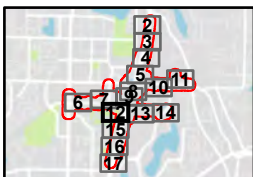


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100 Feet



Wetland and Stream Study Area

Vegetation and Wildlife Study Area

Parcel Boundary

Olympic Pipeline Easement

Stream (Pipe)

Wetland Buffer

Stream Buffer

Wetland

Stream

WDFW Culvert ID

Commercial/Residential

Shrublands

Upland Grassland

Upland Mature Forest

Upland Young Forest

Figure 3-12

Existing Conditions

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Federal Way, WA

Date: 11/8/2024 Author: BrumbCia Path: \\parametrix.com\proj\PSO\Projects\Clients\2441-City of Federal Way\554-2441-022 City Center Access\90Srvs\GIS\MapDocs\Wetlands\ProFig4_X_WetlandsAndStreams.aprx

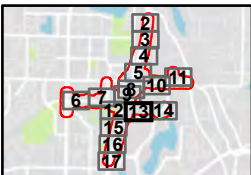


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Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100 Feet



- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area
- Parcel Boundary
- Olympic Pipeline Easement
- Stormwater Feature
- Wetland
- Wetland Buffer

- Commercial/Residential
- Shrublands
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

Figure 3-13
Existing Conditions
Federal Way City Center Access
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Federal Way, WA

Date: 11/6/2024 Author: BrumbyCla Path: \\parametrix.com\proj\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-022 City Center Access\90Srvs\GIS\MapDocs\Wetlands\Pol\Fig4_X_WetlandsAndStreams.aprx



Parametrix

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0 25 50 100 Feet



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|------------------------------------|--------------------|------------------------|
| Wetland and Stream Study Area | Stormwater Pipe | Commercial/Residential |
| Vegetation and Wildlife Study Area | Wetland Buffer | Upland Grassland |
| Parcel Boundary | Stormwater Feature | Upland Mature Forest |
| | Wetland | |

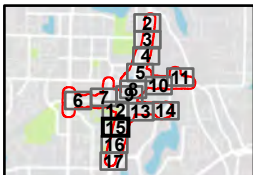
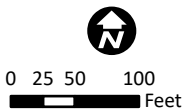
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Federal Way City Center Access
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Federal Way, WA

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Parametrix

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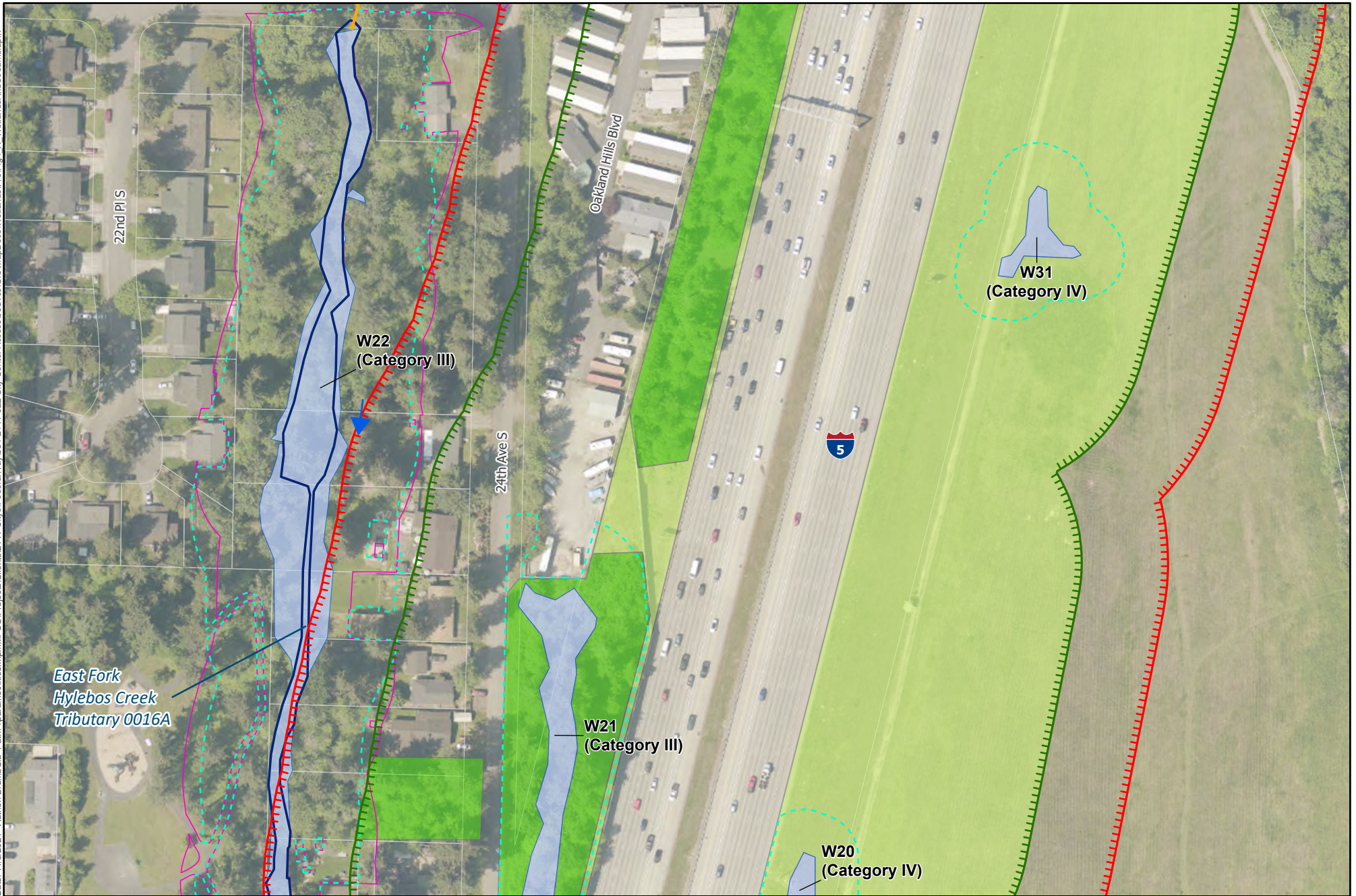


- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area
- Parcel Boundary
- Olympic Pipeline Easement
- Stream (Pipe)
- Wetland Buffer
- Stream Buffer
- Wetland
- Stream

- Commercial/Residential
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

Figure 3-15
Existing Conditions
Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA

Date: 11/6/2024 Author: BrumbCia Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-City of Federal Way\554-2441-022 City Center Access\90S\src\GIS\MapDocs\Wetlands\ProjFig4_X_WetlandsAndStreams.aprx

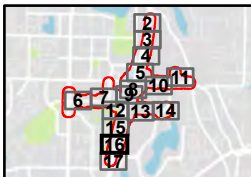


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Feet

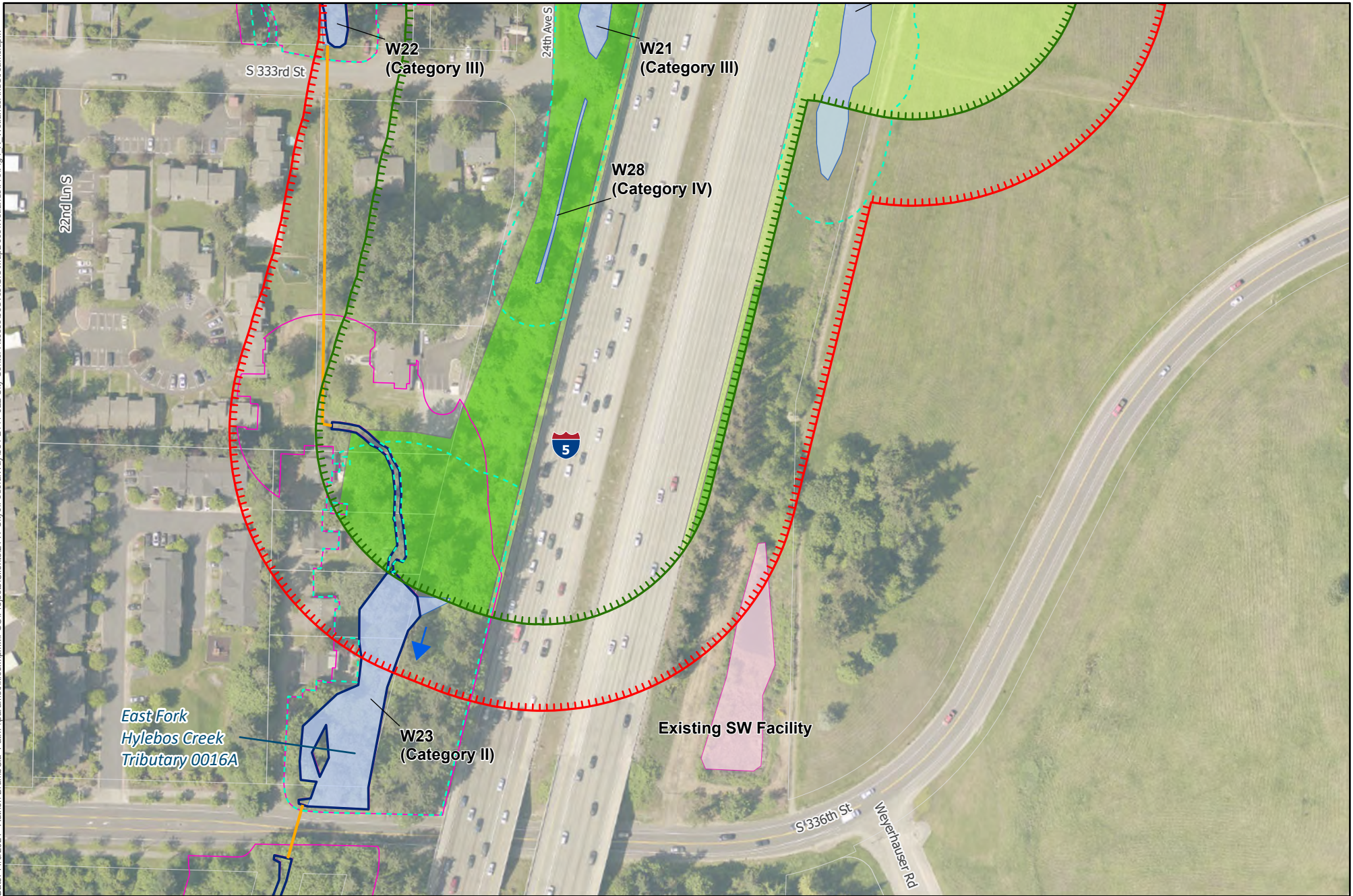


- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area
- Parcel Boundary
- Stream (Pipe)
- Wetland Buffer
- Stream Buffer
- Wetland
- Stream

- Commercial/Residential
- Upland Grassland
- Upland Young Forest

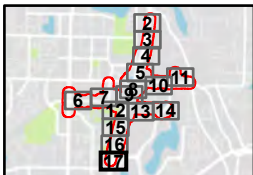
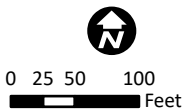
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Existing Conditions
Federal Way City Center Access
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Federal Way, WA

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Parametrix

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- | | | |
|------------------------------------|--------------------|------------------------|
| Wetland and Stream Study Area | Stream (Pipe) | Commercial/Residential |
| Vegetation and Wildlife Study Area | Wetland Buffer | Upland Grassland |
| Parcel Boundary | Stream Buffer | Upland Young Forest |
| | Stormwater Feature | |
| | Wetland | |
| | Stream | |

Figure 3-17
Existing Conditions
Federal Way City Center Access
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Federal Way, WA

3.4.2 Vegetation

Wetland vegetation communities in the study area range from those communities typical of highly disturbed environments within urban communities to those communities typical of relatively undisturbed forested and wetland environments. The vegetation communities within disturbed environments through the City core and surrounding urban development are typified by landscaped ornamental and native plantings with fragmented palustrine emergent and scrub-shrub wetlands dominated by reed canarygrass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus armeniacus*), and red-osier dogwood (*Cornus alba*). Dominant vegetation within relatively undisturbed forested communities includes upland species, such as bigleaf maple (*Acer macrophyllum*) and Douglas-fir (*Pseudotsuga menziesii*), and dominant wetland species, such as red alder (*Alnus rubra*), Oregon ash (*Fraxinus latifolia*), and black cottonwood (*Populus balsamifera*).

Those relatively undisturbed wetland communities within the study area include palustrine aquatic bed, palustrine emergent, palustrine scrub-shrub, and palustrine forested communities dominated by sedges (*Carex* sp.), common ladyfern (*Athyrium cyclosorum*), creeping buttercup (*Ranunculus repens*), salmonberry (*Rubus spectabilis*), and red alder. A bog that is located within the study area is dominated by western hemlock (*Tsuga heterophylla*), bog laurel (*Kalmia polifolia*), and Labrador tea (*Ledum groenlandicum*).

3.4.3 Soils

Nine soil types are mapped by NRCS within the study area (NRCS 2024a):

- Alderwood gravelly sandy loam AgB, 0% to 8% slopes; Hydric Rating: 10.
- Alderwood gravelly sandy loam AgC, 8% to 15% slopes; Hydric Rating: 5.
- Alderwood gravelly sandy loam AgD, 15% to 30% slopes; Hydric Rating: 5.
- Arents, Alderwood material AmB, 0% to 6% slopes; Hydric Rating: 0.
- Arents, Alderwood material AmC, 6% to 15% slopes; Hydric Rating: 0.
- Everett-Alderwood gravelly sandy loam EwC, 6% to 15% slopes; Hydric Rating: 5.
- Tukwila muck Tu; Hydric Rating: 100.
- Orcas peat Or; Hydric Rating: 100.
- Seattle muck Sk; Hydric Rating: 100.

The predominant soil mapped in the study area is Alderwood gravelly sandy loam, with 0% to 8% slopes. Apart from soils mapped as muck or peat, all soils are moderately well drained and do not have hydric soil conditions (NRCS 2024b). A soil survey map is included in Appendix A. Based on field observations, soils in the study area are primarily silt-, sand-, and clay-loams as well as peat.

3.4.4 Hydrology

Wetlands hydrology in much of the study area is supported by a high groundwater table, precipitation, surface runoff from adjacent roads, and overbank flooding from the East Fork Hylebos Creek Tributary 0016A. Many of the wetlands are depressional systems adjacent to major roadways. These wetlands likely receive their hydrology from stormwater inputs, road runoff and a high groundwater table. Riverine wetlands associated with East Fork Hylebos Creek Tributary 0016A are hydrologically supported by the stream and a high groundwater table.

3.4.5 Wetland Buffers

Wetland buffers range from a variety of habitats that are moderately to highly disturbed. Wetland buffers include forests, shrub, and herbaceous habitats. Disturbance types include regularly mown roadside grasses, access roads, and adjacent roadways. Wetland buffers that are not functional, such as structures, roads, or parking lots, have been removed from the analysis, pursuant to FWRC 19.145.440(4). Wetland buffers shown on Figure 3-1 to 3-17 have been clipped to the edge of structures or impervious surfaces.

3.5 Aquatic Resources

This section describes streams, riparian and in-stream habitat, and fish use within the study area. Relevant habitats and species of local importance, identified in Federal Way's fish and wildlife habitat conservations areas regulations (FWRC 19.145.260) are also discussed. No streams in the study are in unincorporated King County. Mapped streams are shown in Figures 3-1 to 3-17.

3.5.1 East Fork Hylebos Creek Tributary 0016A

One stream is in the study area: the East Fork Hylebos Creek Tributary 0016A. Summary information for East Fork Hylebos Creek Tributary 0016A is presented in Appendix B. The intermittently flowing stream generally flows northeast to southwest through the study area.

Wetland W11, located north of S 320th Street and east of I-5, is the headwater of East Fork Hylebos Creek Tributary 0016A. Surface water exits W11 through a 30-inch concrete pipe (Site ID 995300) for approximately 245 feet below the I-5 northbound on-ramp and discharges into W10. W10 is a permanently ponded wetland bordered by S 320th Street to the south, I-5 to the west, and the northbound I-5 on-ramp to the northeast. Water exits W10 through a submerged 30-inch concrete pipe (Site ID 995299) for approximately 665 linear feet, crossing under S 320th Street and I-5 northbound on-ramps to the south before discharging in the northwest side of W5.

The upper limits of the defined stream channel begin at the outlet of the S 320th Street crossing (Site ID 995299), where flow enters W5. Surface flow travels approximately 50 feet within a defined channel to the southeast towards the Olympic Pipeline easement. The channel loses definition where it intersects the Olympic Pipeline easement and water slowly moves down-gradient through a palustrine scrub-shrub vegetation community and partially into the delineated bog interior within W5, east of the Olympic Pipeline easement. The stream becomes channelized again for approximately 325 feet at the southeast side of the wetland along the toe of the I-5 fill slope. Water exits the wetland and stream through approximately 1,640 linear feet of pipe below I-5 (Site ID 992364) and the King County Metro Park and Ride (Site ID 420614) before daylighting in a straightened and incised channel within the Belmor Park Golf & Country Club.

The East Fork Hylebos Creek Tributary 0016A continues south for approximately 2.1 miles, flowing through a series of piped and open-channel segments with wetlands, before turning east near S 356th Street and crossing I-5, where it converges with other incoming tributaries and forms East Fork Hylebos Creek. East Fork Hylebos Creek continues to flow on the east side of I-5 and converges with West Fork Hylebos Creek near the Porter Way crossing of I-5. From this point, the stream continues as Hylebos Creek, crossing back to the west side of I-5 and discharging to the Hylebos Waterway in Tacoma.

3.5.2 Aquatic Habitat

The low-gradient stream segment within W5 is located at the toe of the I-5 embankment. The defined channel is relatively straight. Streambed material consists of sand, gravel, and cobbles near the culvert outlet. Dense upland and wetland forest adjacent to the stream provide input of small woody debris and organic matter into the stream. The stream is shaded by forest through its extents.

Downstream west of I-5, the East Fork Hylebos Creek Tributary 0016A daylights within Belmor Park Golf & Country Club in a ditch-like linear channel that also supports wetlands conditions (W6). The stream is low-gradient, and the streambed consists of fine sediments, which supports an abundance of reed canarygrass, a non-native, invasive grass within the stream. South of Belmor Park, the stream is generally straight and still confined by residential development and culverts.

Riparian vegetation immediately adjacent to the stream west of I-5 consists of native and non-native shrubs and herbaceous vegetation with a mostly native forest canopy. In general, riparian areas are narrow and constrained by development on both sides of the stream. Due to the proximity of residential housing, a golf course, roads, and parks, the riparian habitat is highly disturbed with pollution, noise, and light intrusions.

Other aquatic habitats include wetland habitat. Wetlands are described in Section 3.4 and Appendix B.

3.5.3 Aquatic Species

Several aquatic ESA-listed species are mapped as potentially occurring within the study area; however, due to reasons stated below and described in the BA (Parametrix 2023), no ESA-listed aquatic species occur within the study area. The USFWS Information for Planning and Consultation program (IPaC) listed bull trout (*Salvelinus confluentus*) as potentially being located within the study area. ESA-listed aquatic species under the National Marine Fisheries Service (NMFS) jurisdiction include a Chinook salmon (*Oncorhynchus tshawytscha*) Puget Sound Evolutionarily Significant Unit and a steelhead (*O. mykiss*) Puget Sound Distinct Population Segment. Chinook salmon and coho salmon (*O. kisutch*) are WDFW Priority Species in Washington State; however, WDFW (2024c) does not identify any observations of state-listed aquatic species in the study area. The study area does not contain aquatic species of local importance identified by Federal Way (FWRC 19.145.260(6)) or King County (2016).

Anadromous salmonid fish use is not mapped, documented, or presumed in East Fork Hylebos Creek Tributary 0016A within the study area (NWIFC 2024). Under current conditions, human-created barriers to fish passage prevent anadromous salmonids from entering stream reaches in the study area (WDFW 2024a, 2024c). Resident fish may be present within the East Fork Hylebos Creek Tributary 0016A; however, intermittent stream flows and fish passage barriers between the study area and potential population sources downstream or upstream may reduce the likelihood that they occur in the study area. The basin size, channel width, and gradient of the stream indicate the potential to support fish in the future. For this reason, the stream is classified as a Type F stream, in accordance with FWRC 19.145.260, which has a required buffer width of 100 feet. Stream buffers that are not functional, such as structures, roads, or parking lots, have been removed from the analysis. Stream buffers shown on the figures have been clipped to the edge of structures or impervious surfaces.

For the reasons stated above, bull trout do not occur within the study area. Furthermore, USFWS issued a letter of concurrence following a request for formal consultation stating that none of the

waterbodies in the study area support or are mapped to support anadromous fish due to fish passage barriers and intermittent flow (Tanner 2023).

The documented distribution of Chinook salmon in the Hylebos Creek watershed does not extend upstream into East Fork Hylebos Creek or its tributaries (WDFW 2024a). Chinook salmon are presumed to be present in East Fork Hylebos Creek only in the lowest 700 feet of the stream (WDFW 2024a), approximately 1.24 miles downstream of the study area (WDFW 2024a). Chinook salmon are not presumed to use habitats in East Fork Hylebos Creek or its tributaries upstream of that point, but there are no gradient barriers that preclude access to East Fork Hylebos Creek Tributary 0016A in the study area (WDFW 2024a).

Coho salmon and winter-run steelhead have been documented in East Fork Hylebos Creek approximately 1.1 miles downstream of the study area (WDFW 2024a). As noted above, the basin size, channel width and gradient of East Fork Hylebos Creek Tributary 0016A in the study area indicate the potential to support these species in the future.

3.6 Vegetation and Wildlife

This section describes vegetation cover habitat types and addresses terrestrial species and habitats of concern, which includes wildlife habitat conservation areas, as defined by Federal Way (FWRC 19.145.260) and King County (KCC 21A.06.1423). A discussion about ESA-listed species in relation to the study area is included in the BA (Parametrix 2023), except for discussions about the northwestern pond turtle (*Actinemys marmorata*), monarch butterfly ([*Danaus plexippus*](#)), and Suckley's cuckoo bumblebee (*Bombus suckleyi*), which are included below. Vegetation cover types identified in the study area are mapped in Figures 3-1 to 3-17.

3.6.1 Vegetation Cover

Through a review of the Natural Heritage Program (NHP), vegetation in the study area was evaluated for the presence of rare plants and priority ecosystems (WDNR 2024). No documented populations of rare plants or priority ecosystems were in the study area. The nearest NHP occurrences are a Douglas spirea shrub wetland 1.12 miles to the southwest, and a population of Canadian St. John's wort (*Hypericum majus*) 0.61 miles to the southeast.

Habitats mapped within the study area are:

- Upland mature and young forests.
- Shrublands.
- Upland grasslands.
- Wetlands (forested, shrub, and emergent).
- Streams.
- Commercial or residential areas.
- Stormwater ponds.

The majority of the study area contains commercial/residential areas, which largely surround other vegetated areas in this urban environment. Commercial/residential areas are often dominated by non-native lawn grasses, shrubs, and trees. Upland grasslands and shrublands occur primarily adjacent to roads. Shrublands areas contain a mixture of native and non-native shrub species, such as Himalayan blackberry, salmonberry, and willows, and grassland areas contain a mixture of native

and non-native grasses and herbaceous plants. These areas provide habitat for birds and small mammals. Grasslands and shrublands disturbed by construction could be replaced within weeks to years, depending on vegetation type. Stormwater ponds, located adjacent to roads and commercial development, have fluctuating water levels and regular maintenance, resulting in low habitat value for wildlife. Wetland and riparian habitat types are discussed in their corresponding sections (Section 3.4 and 3.5).

The analysis focuses primarily on forests, which comprise the most common vegetated habitat; therefore. Two upland forest types were identified: mature forest and young forest. Some upland forests include riparian habitats adjacent to streams and wetlands. Mature forests in the study area meet the WDFW criteria for Mature Forest priority habitat, where mature stands are over 80 years old, with trees exceeding 21 inches in diameter and having high structural complexity (WDFW 2024c). It would take decades to recover this habitat following disturbance. Within the study area, upland mature forests are dominated by Douglas-fir trees and high structural complexity, with dense shrubs (salmonberry, salal) and herbaceous vegetation (sword fern, lady fern), logs, and snags. Several trees, particularly near North Lake, exceed 36 inches in diameter. Young forests are dominated by native trees but do not exhibit size and/or habitat complexity as seen in a mature native forest. It would take years to decades to recover this habitat following disturbance. Young upland forests are dominated by Douglas-fir or red alder trees. The understory of young Douglas-fir forests is sparse with little structural complexity. Red alder-dominated forests are more complex, with shrubs (salmonberry, osoberry) and herbaceous vegetation (sword fern and other forbs), snags, and logs. Invasive plants, such as Himalayan blackberry, are found on the out edges of the red alder forest.

The study area comprises 15% upland mature forests (approximately 46 acres) and 9% upland young forests (approximately 29 acres). The largest patches of forest are north of S 320th Street, between I-5 and Weyerhaeuser Way S, where the S 324th Street extension is proposed; south of S 320th Street; and east of I-5, adjacent to W5. The habitat value for birds and small mammals in this area is high, especially in the highly urbanized City, where large patches of undisturbed forest are uncommon. However, the lack of continuous wildlife corridors hinders movement of wildlife between these forests and other habitats.

3.6.2 Terrestrial Wildlife

The habitats described above have been highly fragmented from urban development and lack corridors between these resources and other habitats beyond the study area. Therefore, wildlife observed during field visits include species typically accustomed to human activities, such as American robin (*Turdus migratorius*), song sparrow (*Melospiza melodia*), Pacific wren (*Troglodytes pacificus*), red-winged blackbird (*Agelaius phoeniceus*), American crow (*Corvus brachyrhynchos*), rock pigeon (*Columba livia*), eastern cottontail (*Sylvilagus floridanus*), deer (*Odocoileus virginianus*) and bullfrogs (*Rana catesbeiana*).

Mature and young native forests, including riparian habitat associated with East Fork Hylebos Creek Tributary 0016A, and a variety of wetland types provide habitat important for wildlife. These habitats provide food, cover, and nesting for species typically found in urban Puget Sound habitats. Additionally, the stormwater features in the study area provide low to moderate habitat value for wildlife.

USFWS IPaC list identifies several listed species that potentially occur within the study area: marbled murrelet (*Brachyramphus marmoratus*), streaked horned lark (*Eremophila alpestris strigata*), yellow-billed cuckoo (*Coccyzus americanus*; Western DPS), Taylor's checkerspot (*Euphydryas editha taylori*), and the North American wolverine (*Gulo gulo luscus*). These terrestrial ESA-listed species are

not known to occur within the study area, and the project will have no effect on these species, as demonstrated in the BA developed for this project.

WDFW (2024c) does not identify any observations of state-listed terrestrial species in the study area. The study area does not contain habitats and species of local importance identified by Federal Way (FWRC 19.145.260(6)) or King County (2016). In addition, King County protects bald eagles (*Haliaeetus leucocephalus*), great blue herons (*Ardea herodias*) and ospreys (*Pandion haliaetus*) under its wildlife conservation areas regulations (KCC 21A.24.382). Bald eagles, protected under the Bald and Golden Eagle Protection Act, were not observed during field studies, but were sighted at North Lake in recent years (eBird 2024). One osprey nest is on a cellular tower at the southern end of the study area between 24th Avenue S and I-5.

The Migratory Bird Treaty Act (MBTA), administered by USFWS, makes it unlawful to take any migratory bird, or the parts, nests, or eggs of any such bird, except under the terms of a valid permit. In context of this Act, “take” is defined as “pursue, hunt, shoot, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect, or kill” (16 U.S. Code §715n). Nearly all bird species that may be present in the ecosystem study area are protected under the MBTA. The proposed project will include tree removal and vegetation clearing. Additional possible stressors include elevated noise from construction equipment and a disruption of prey species. To minimize the risk of harm to species protected under the MBTA, the City would consult with staff from WDFW and/or USFWS about measures to conserve migratory birds and their nests.

3.6.2.1 Northwestern Pond Turtle

Northwestern pond turtles are semiaquatic, which means they require both aquatic and terrestrial habitats that are within close proximity and connected to one another. In Washington, northwestern pond turtles are found associated with ponds, small lakes, and wetlands at elevations below 1,000 feet (Hallock et al. 2017).

Terrestrial environments are required for nesting, overwintering and aestivation (warm season dormancy), basking, and movement/dispersal. Aquatic environments are required for breeding, feeding, overwintering and sheltering, basking, and movement/dispersal. Pond turtles can be found in both lotic waterbodies (e.g., streams, rivers, ditches) and lentic waterbodies (e.g., ponds, lakes, reservoirs). The northwestern pond turtle is omnivorous and considered a dietary generalist, consuming a wide variety of food items (USFWS 2023).

Consistent with the requirements of ESA section 7(c), the Federal Highway Administration (FHWA) requested consultation with the NMFS and USFWS on March 28, 2023. On December 18, 2023, USFWS issued a letter of concurrence with FHWA’s determination that the project is not likely to adversely affect species and critical habitats under USFWS jurisdiction. Consultation with NMFS is ongoing.

After consultation with USFWS was completed, USFWS issued a proposal to list the northwestern pond turtle as threatened (88 Federal Regulations [FR] 68370, October 3, 2023). If the pond turtle is listed prior to construction, a no-effect determination is recommended. The study area is in the historic range of the species, but northwestern pond turtles have largely disappeared from the Puget Sound lowlands since the 1980s (WDFW 2024b). The nearest known extant population (reestablished through a captive breeding program) is more than 10 miles away and separated from the study area by rivers, highways, and railroad tracks that pose barriers to dispersal. Currently there are only six populations of northwestern pond turtle that occur in Washington State. Of those six, two are in South Puget Sound (Mason and Pierce Counties), while the rest reside in the Columbia River Gorge.

3.6.2.2 Monarch Butterfly

The monarch butterfly was proposed for listing as threatened (89 FR 100662, December 12, 2024) after consultation with USFWS was completed, and the species is included in the current IPaC species list (January 2025) for the study area. Monarch butterflies are migratory. Most individuals from the western population overwinter in coastal California and then migrate north to the Pacific Northwest and east toward the Rocky Mountains; some western individuals overwinter in Mexico (USFWS 2024b). The availability of milkweed (*Asclepias* spp.) is essential to monarch reproduction and survival; monarchs require healthy and abundant milkweed for oviposition and as a larval food source (USFWS 2024b). In Washington State, milkweed populations are native only to areas east of the Cascade Mountains (Giblin and Legler 2025). There has been one record of monarch butterflies breeding in western Washington—an unverified report of larvae on a cultivated milkweed plant near Auburn in 1984 (Xerces Society 2025). Should the species become listed prior to project construction, a no-effect determination is recommended.

3.6.2.3 Suckley's Cuckoo Bumble Bee

The Suckley's cuckoo bumble bee (*Bombus suckleyi*) was also proposed for listing as endangered (89 FR 102074, December 17, 2024) after consultation with USFWS was completed. This species is included in the current IPaC species list (January 2025) for the study area. As an obligatory social parasite, Suckley's cuckoo bumble bees are dependent on host species for much of their life cycle (USFWS 2024c).

Historically, Suckley's cuckoo bumble bee was found in a wide range of habitats throughout much of North America, including Washington State (USFWS 2024c). Despite intensive survey efforts, however, no individuals of this species have been observed in the state in more than 20 years (USFWS 2024c). Should the species become listed prior to project completion, we propose a no-effect determination.

4. Project Impacts

The project will have direct and indirect impacts on wetlands, streams, and their buffers. Direct impacts will include permanent impacts (the cut and fill limits) as well as temporary construction-related impacts on adjacent areas when providing construction access.

4.1 Wetland Impacts

Direct permanent and temporary wetland impacts are detailed in Table 4-1. Project impacts on resources are shown in Figures 4-1 to 4-17.

4.1.1 Permanent Impacts

Permanent project impacts to wetlands occur where project actions cause a permanent loss of wetland area and/or functions. These impacts arise from the modification of existing roads and construction of new roads, roundabouts, and stormwater facilities. Other permanent impacts may be incurred from conversion of wetland vegetation type (e.g., forested vegetation to emergent vegetation). Wetland hydrology may also be altered because hydrological inputs may change due to altered discharge volumes and sources from new and modified stormwater facilities; alteration of flow paths from installation of fish-passable culverts and new stream channels; and interception of precipitation by elevated structures. Wetlands may also experience increased shading from new bridges, reducing the duration of sunlight that plants receive, which could adversely impact wetland vegetation communities.

The analysis of permanent impacts does not differentiate between at-grade and elevated structures; therefore, impact numbers presented in Table 4-1 are conservative estimates. As such, the majority of permanent wetland impacts are to the western edge of W5. However, some of these impacts are due to a new elevated northbound I-5 on-ramp from S 324th Street. Therefore, a portion of the impacts would not be due to a loss of wetland area but a conversion of wetland vegetation community type because tall trees may not grow under the elevated on-ramp.

Permanent project impacts would also affect approximately 4.26 acres (185,735 square feet) of wetland buffer. Due to their close proximity, some wetland buffers overlap; therefore, buffer impacts are reported as an aggregate instead of individually to avoid double counting of buffer impacts. However, buffer impact areas are reported separately for wetlands and stream and are therefore double counted where stream and wetland buffers overlap.

Permanent removal of vegetation in wetland buffers would also result in decreased buffer functions to improve water quality, reduce sedimentation, attenuate surface runoff, and provide an auditory and visual block between human activities and wildlife that use wetland habitats. Many wetland buffers in the study area consist of young and mature forests. Most wetland buffers in the study area are already truncated due to their proximity to developed areas; the project will further degrade valuable wetland buffer functions by removing additional buffer area between roads and wetlands. Many wetlands, in particular W5, W10, W14, W17, W18, W21, W28, W31, W33, and W34, would experience severely reduced buffer functions because new project elements would abut the wetlands.

4.1.2 Temporary Construction-Related Impacts

Direct, temporary construction-related impacts on wetlands or wetland buffers occur when resources are disturbed by the clearing of vegetation and ground disturbances but are restored to preexisting

conditions. As such, construction-related impacts are generally limited in duration. Temporary construction-related impacts may be considered short term or long term, depending on the type of vegetation impacted and on the length time between the disturbance and restoration. For example, following restoration, emergent vegetation is expected to quickly reestablish. However, shrubs and trees could potentially take years to decades to reestablish and this impact would be considered a long-term temporary impact or even a permanent impact. For example, removal of mature forests may be considered a permanent impact. This analysis does not distinguish between long-term temporary construction-related impacts, short-term temporary construction-related impacts, or construction-related impacts that may be considered permanent—those will be determined during future permitting phases of the project.

Types of temporary construction impacts that may occur for this project include temporary alteration of wetland area, soils, hydrology, and/or vegetation. Construction activities that incur temporary construction-related impacts may include use of staging areas, access roads, temporary work areas, clearing, grading, erosion and sediment control, and temporary structures needed for construction activities. Other temporary construction-related impacts may include soil compaction, accidental spills of hazardous substances, noise, light, sedimentation, and introduction of invasives species. This analysis assumes that construction-related impacts would be minimized through the use of appropriate best management practices (BMPs). Direct, temporary construction-related impacts on wetlands are shown in Table 4-1.

Approximately 205,370 square feet (4.72 acres) of wetland buffers would be affected by temporary construction-related impacts.

Table 4-1. Direct Impacts on Wetlands in the Study Area

Resource	Total Wetland Size (sf)	Permanent Impacts (sf)	Temporary Construction-Related Impacts (sf)
W2 ^a	1,255	640	615
W3	670	670	0
W5 (lagg, Category II)	195,930	8,730	15,380
W5 (bog, Category I)	76,465	0	0
W6	8,130	15	0
W7	7,930	0	200
W9	555	0	555
W10	9,890	0	9,890
W12	8,875	3,705	5,170
W14	11,475	1,550	2,630
W17	5,500	15	1,320
W21	14,720	0	9,060
W22	41,580	0	200
W28	760	0	760
W29	1,220	55	1,165
W33	7,530	0	10
W34	390	55	5
Total		15,435 (0.35 acres)	46,960 (1.08 acres)

sf = square feet.

^a The wetland was counted as fully impacted due to the large amount of area receiving direct permanent impacts.

4.2 Aquatic Resource Impacts

Direct permanent and temporary construction-related impacts to streams are detailed in Table 4-2 and shown in Figures 4-1 to 4-16. This section also addresses impacts to riparian habitat and species.

Ground disturbance work in and around streams could potentially cause the following impacts:

- Loss or modification of physical riparian habitat.
- Introduction of sediment and contaminants into the water.
- Degradation of water quality (increased temporary turbidity, loading of heavy metals and hydrocarbons).
- Vegetation disturbance/clearing in wetlands and riparian habitat.
- Altered hydrology.

4.2.1 Permanent Impacts

Permanent impacts or operational effects on aquatic resources would occur where project features alter in-stream habitat or riparian functions. Modifications to the in-stream habitat would be related to the installation of fish-passable culverts between W5 and W6/East Fork Hylebos Creek Tributary 0016A, where the existing stream channel may be replaced by fish-passable culverts or modified with new streambed material. Permanent removal of riparian vegetation for the elevated on-ramp to northbound I-5 from S 324th Street, adjacent to the stream west of I-5, may degrade riparian functions by increasing water temperatures from more exposure to sunlight and decreasing the input of woody debris and organic matter. This may result in a reduction of habitat used by aquatic species that depend on upland habitats adjacent to streams and wetlands. The construction of the I-5 northbound on-ramp from S 324th Street may influence water temperatures and potentially increase shade over the stream outlet adjacent to W5. Shading may affect fish behavior of juvenile salmonids and result in increased vulnerability to predation. Shading may also provide cover for predators. Stream hydrology may be altered with installation of the new fish-passable box culvert under I-5; however, the culverts were designed to avoid alteration to stream and wetland hydrology (see Section 4.3).

Fish-passable culvert replacements and new stream channel would facilitate fish access to headwater habitats in East Fork Hylebos Creek Tributary 0016A upstream of the study area. The project would replace approximately 2,470 feet of culverted stream and approximately 215 feet of existing open channel, with approximately 1,035 feet of fish-passable culverts and approximately 1,165 feet of new daylighted channel. Daylighting over 1,000 linear feet of the stream channel would allow for increased interaction between the new stream channel and associated riparian vegetation, thereby restoring natural processes such as organic input.

The project would increase the total area of pollution-generating impervious surfaces (PGIS), which would result in increased levels of contaminants in stormwater runoff. Despite the addition of PGIS in the study area, the proposed stormwater treatment facilities in the project impact area would reduce the amount of untreated PGIS in the study area. However, the residual contaminants in stormwater runoff from PGIS may persist after treatment and may adversely impact fish or their preferred prey species that pass through these watercourses. An in-depth discussion of stormwater facilities and effects may be found in the BA (Parametrix 2023).

Table 4-2 summarizes direct impacts on East Fork Hylebos Creek Tributary 0016A and its buffer.

Table 4-2. Direct Impacts on Streams and Buffer in the Study Area

Resource	Permanent Impacts (sf)	Temporary Construction-Related Impacts (sf)
East Fork Hylebos Creek Tributary 0016A	80	1,375
Stream Buffer ^a	1,380 (0.03 acres)	780 (0.02 acres)

sf = square feet

^a Buffer impact areas are reported separately for wetlands and stream and are therefore double counted where stream and wetland buffers overlap.

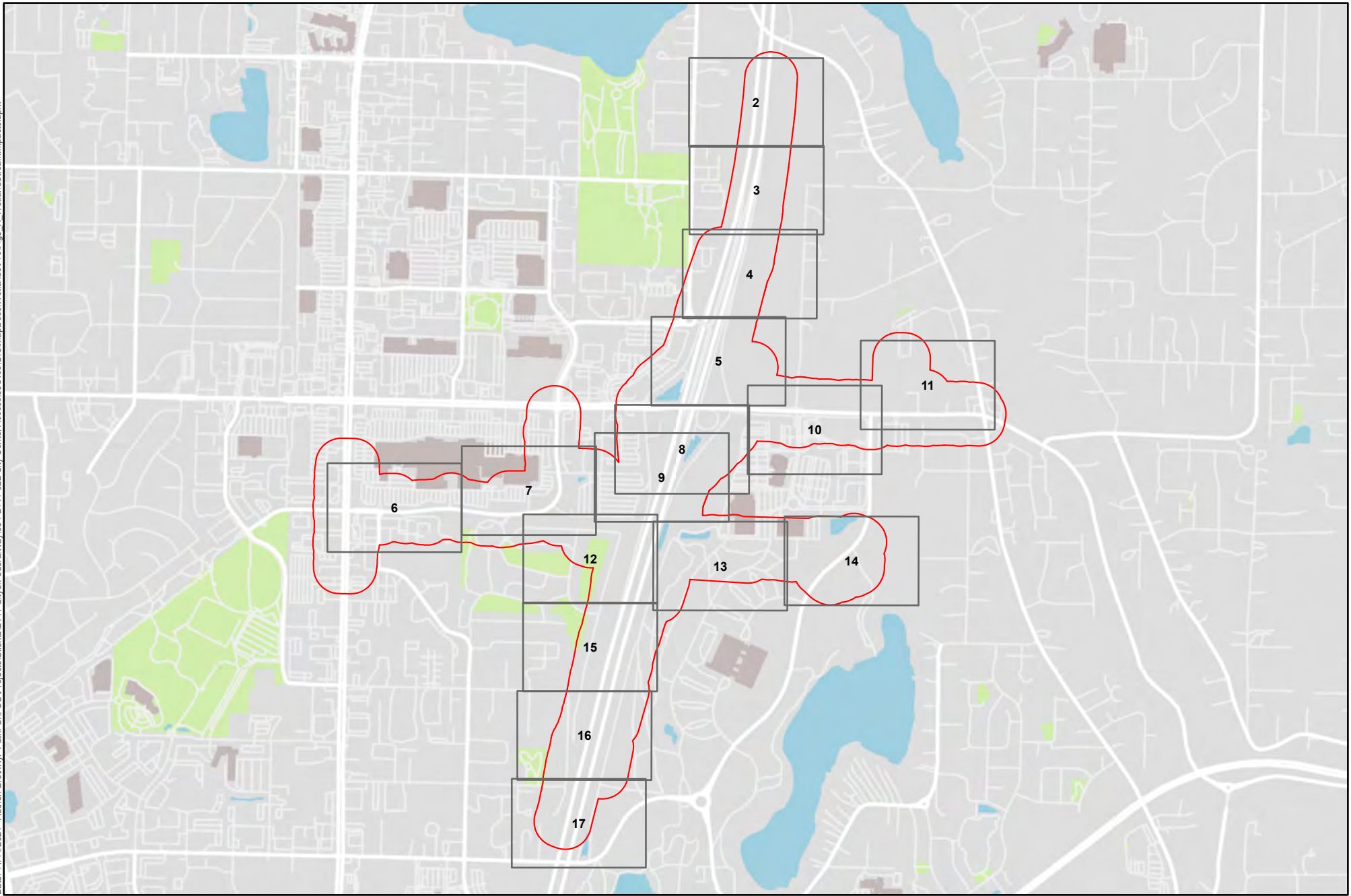
4.2.2 Temporary Construction-Related Impacts

Temporary construction-related impacts on aquatic resources occur where stream and stream buffers are affected by construction activities but are restored following construction. These activities could affect wildlife through elevated noise from construction, ground disturbance, and temporary disruption of movement and migration.

For culvert replacement on the East Fork Hylebos Creek Tributary 0016A, construction activities may include riparian vegetation clearing and ground disturbance for construction access, staging, temporary work areas, erosion and sediment control, dewatering and discharge, and other temporary structures needed for construction activities replacements. These activities may result in the potential to introduce sediment and contaminants into the water. Dewatering may result in a temporary displacement of physical habitat, which would impact fish, amphibians, and invertebrates. However, impacts would be minor, and quick recovery is expected as the stream channel is narrow. These temporary construction-related impacts will be minimized to the extent possible with BMPs and will be restored following construction. If water is present in the stream channel where ground-disturbing work occurs, elevated turbidity could extend up to 100 feet downstream from the project footprint. These impacts will be minimized to the extent possible and are expected to be temporary.

Removing fish-passage barriers will require the clearing of vegetation in the riparian corridor. These cleared areas will be replanted following construction. Potential effects on aquatic wildlife may include harm associated with handling for removal operations. Removing forested riparian habitat would degrade functions because recovery would take years to decades. Furthermore, the potential spread of invasive plant species during construction as a result of vegetation clearing could have a long-term effect on habitat quality through degradation and fragmentation. Measures will be taken to control the potential spread of invasive plant species during construction. Any presence of invasive plant species in the temporarily impacted areas following construction will be identified and controlled during monitoring and maintenance of the restored site.

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Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



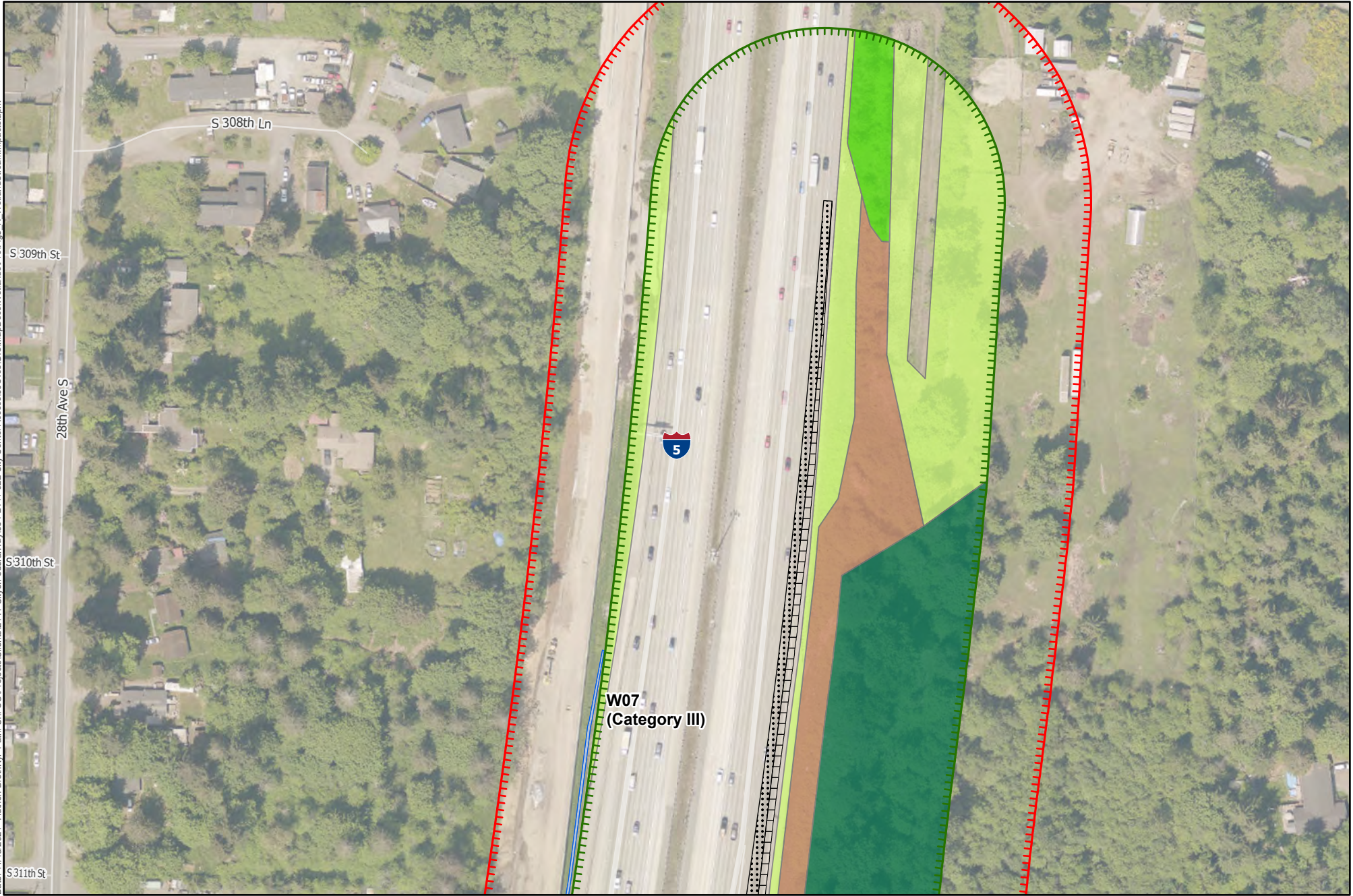
0 400 800 1,600
US Feet

□ Page Extent

Figure 4-1

Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
(Page 1 of 17)
Federal Way, WA

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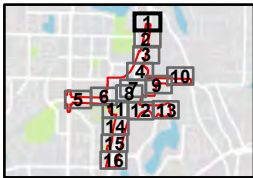


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100 Feet



- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area

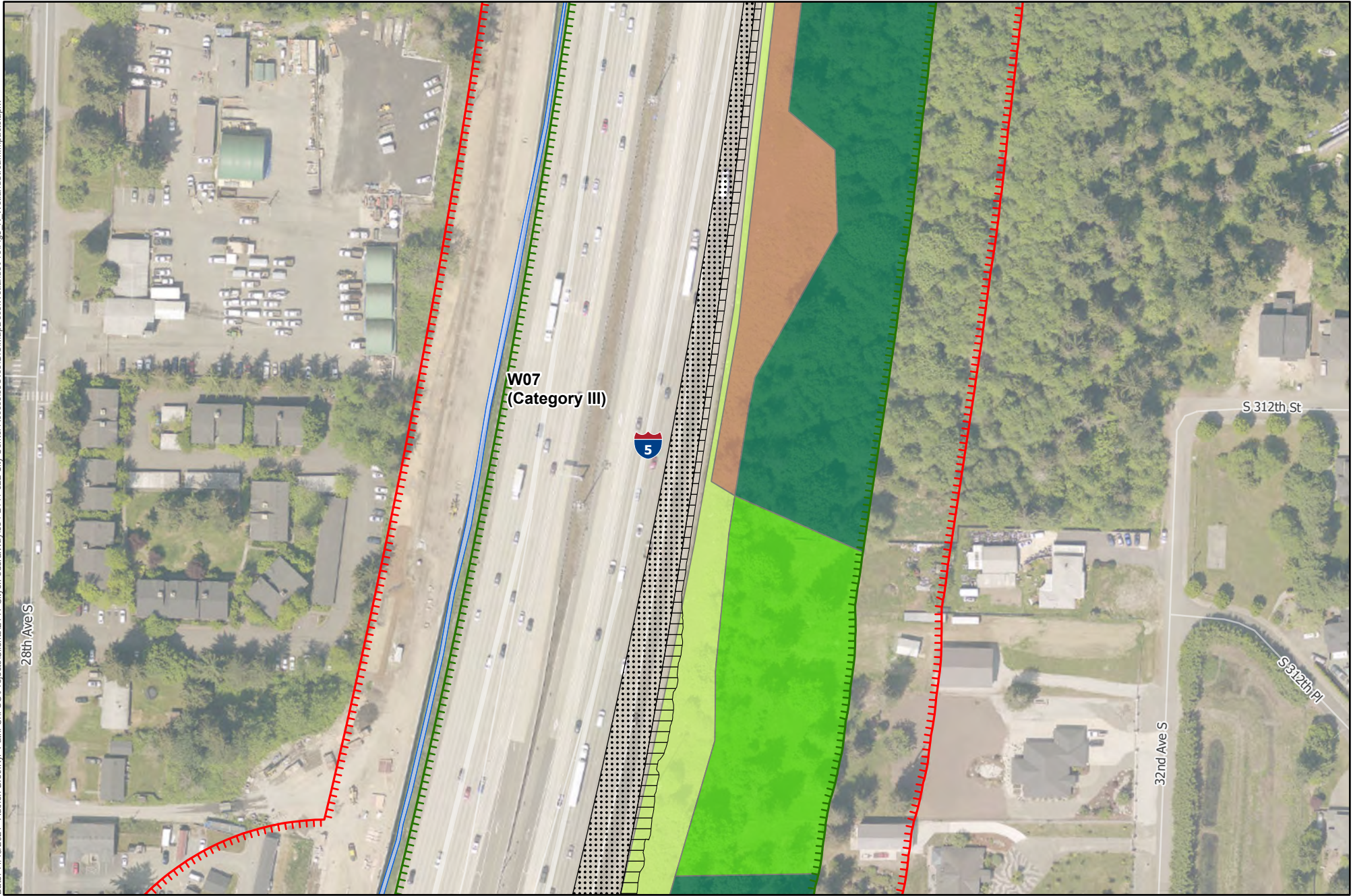
- Wetland
- Shrublands
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

Project Footprint Impact Type

- Temporary, Construction-related
- Permanent Operational

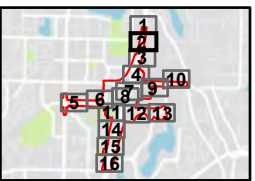
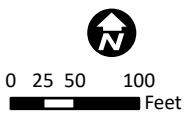
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Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
(Page 2 of 17)
Federal Way, WA

Date: 11/18/2024 Author: Breth Ky Path: U:\PSO\Projects\Clients\2441-City of Federal Way\554-2441-022 City Center Access\09\Sves\GIS\MapDocs\Wetlands\ProFig5 X WetlandStreamImpacts.aprx



Parametrix

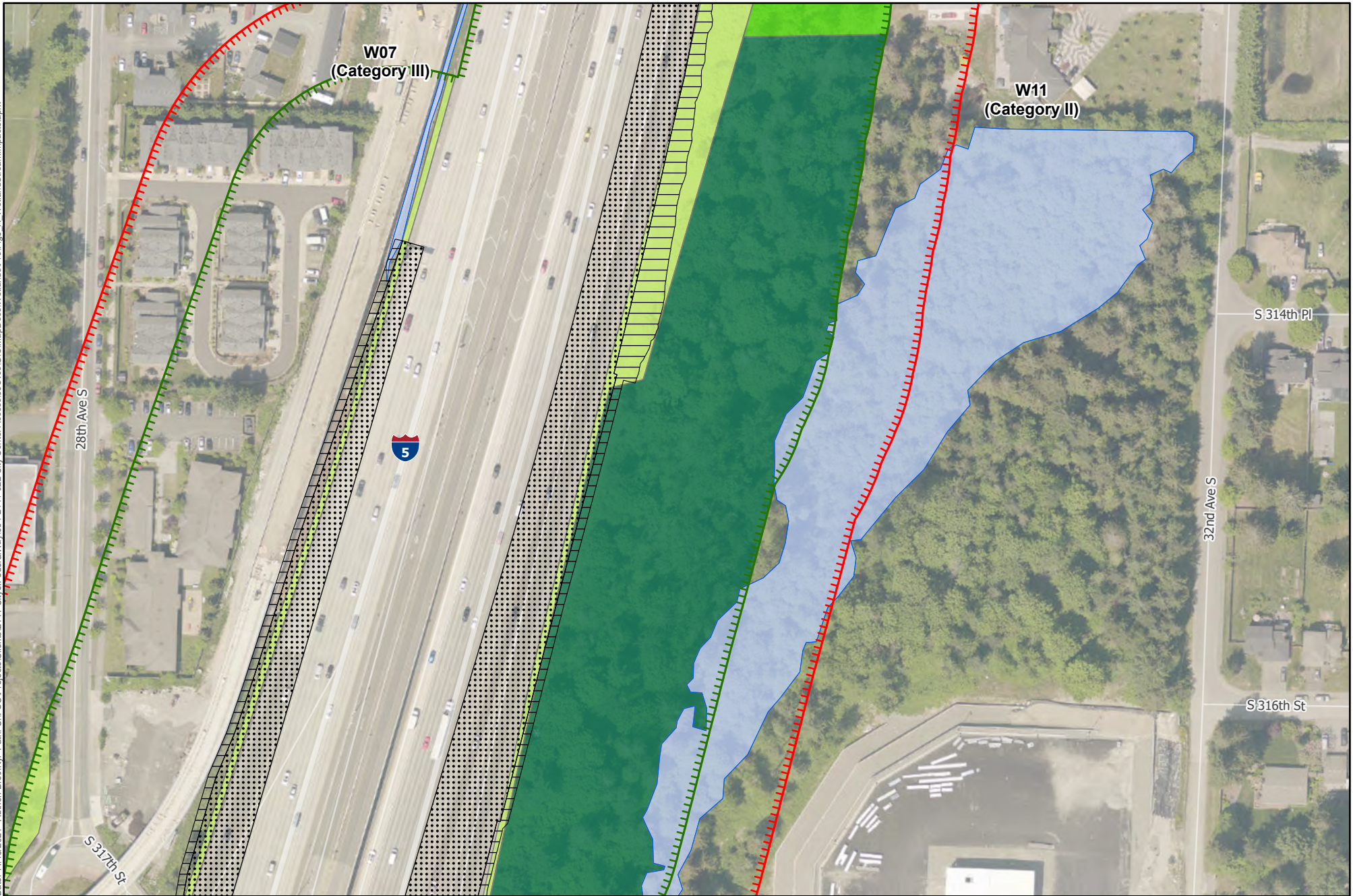
Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



- | | |
|------------------------------------|----------------------|
| Wetland and Stream Study Area | Wetland |
| Vegetation and Wildlife Study Area | Shrublands |
| | Upland Grassland |
| | Upland Mature Forest |
| | Upland Young Forest |

- Project Footprint Impact Type**
- | |
|---------------------------------|
| Temporary, Construction-related |
| Permanent Operational |

Figure 4-3
Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA

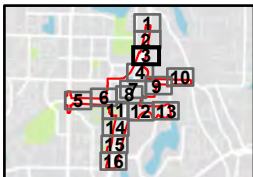


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



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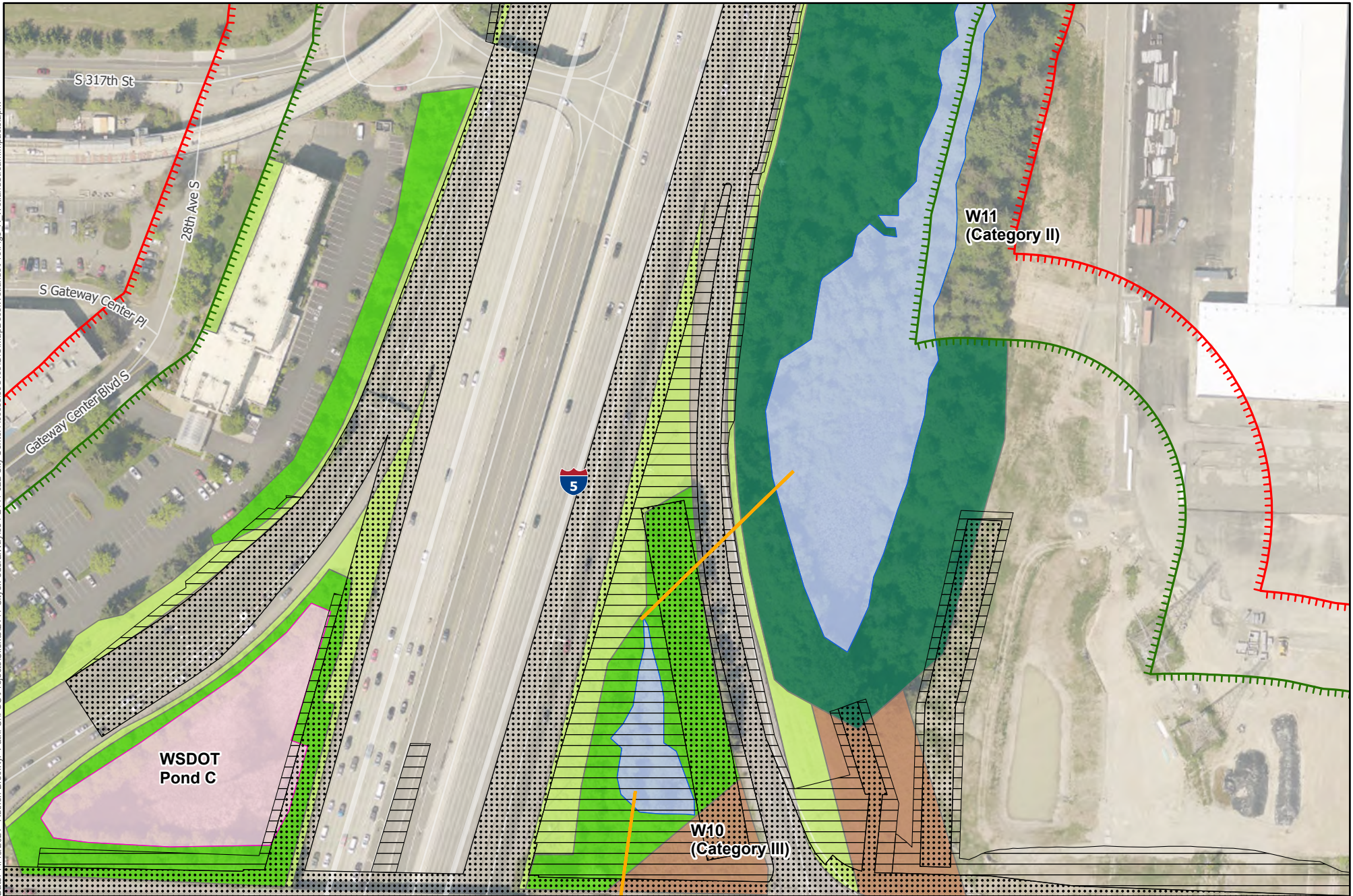


- W07 Wetland and Stream Study Area
- W11 Vegetation and Wildlife Study Area
- Wetland
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

- Project Footprint Impact Type**
- Temporary, Construction-related
 - Permanent Operational

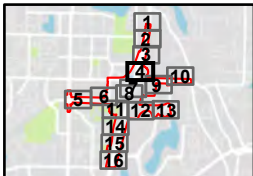
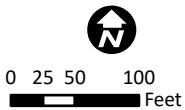
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Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA

Date: 11/18/2024 Author: Breth Ky Path: U:\PSO\Projects\Clients\2441-City of Federal Way\5564-2441-022 City Center Access\09.Sves\GIS\MapDocs\Wetlands\ProFig5 X WetlandStreamImpacts.aprx



Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap

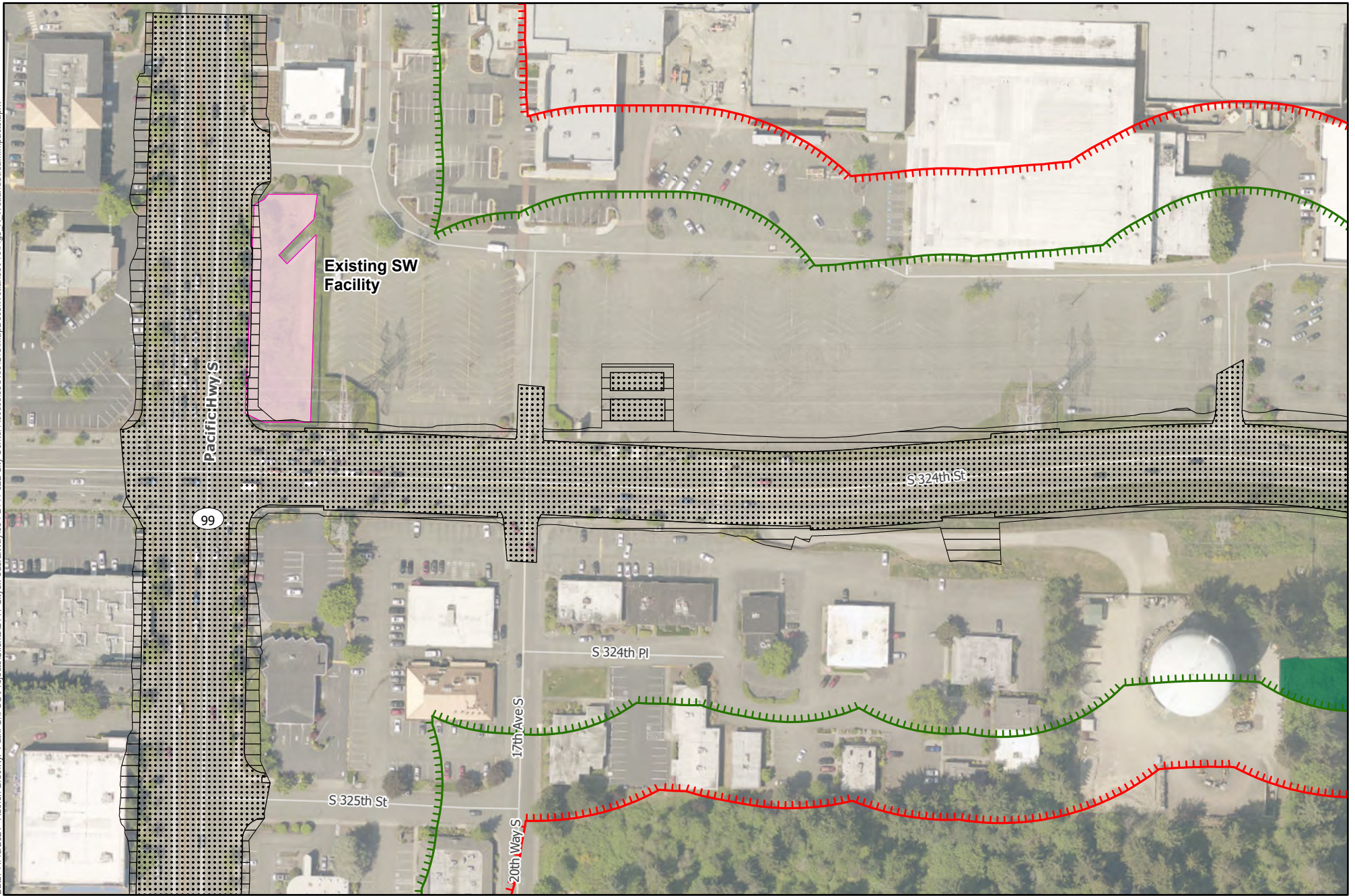


- | | |
|------------------------------------|----------------------|
| Wetland and Stream Study Area | Stormwater Feature |
| Vegetation and Wildlife Study Area | Wetland |
| | Shrublands |
| | Upland Grassland |
| | Upland Mature Forest |
| | Upland Young Forest |

- Stream (Pipe)
- Stream (Pipe)
- Project Footprint Impact Type**
- | |
|---------------------------------|
| Temporary, Construction-related |
| Permanent Operational |

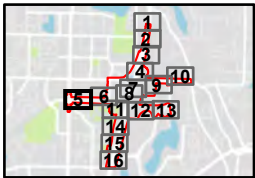
Figure 4-5
Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
(Page 5 of 17)
Federal Way, WA

Date: 11/18/2024 Author: Breth Kyi Path: U:\PSO\Projects\Clients\2441-City of Federal Way\564-2441-022 City Center Access\09\Sves\GIS\MapDocs\Wetlands\ProFig5 X WetlandStreamImpacts.aprx



Parametrix
Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap

0 25 50 100 Feet



- Wetland and Stream Study Area
- Stormwater Feature
- Vegetation and Wildlife Study Area
- Upland Mature Forest

- Project Footprint Impact Type**
- Temporary, Construction-related
 - Permanent Operational

Figure 4-6
Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA

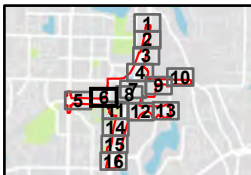


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



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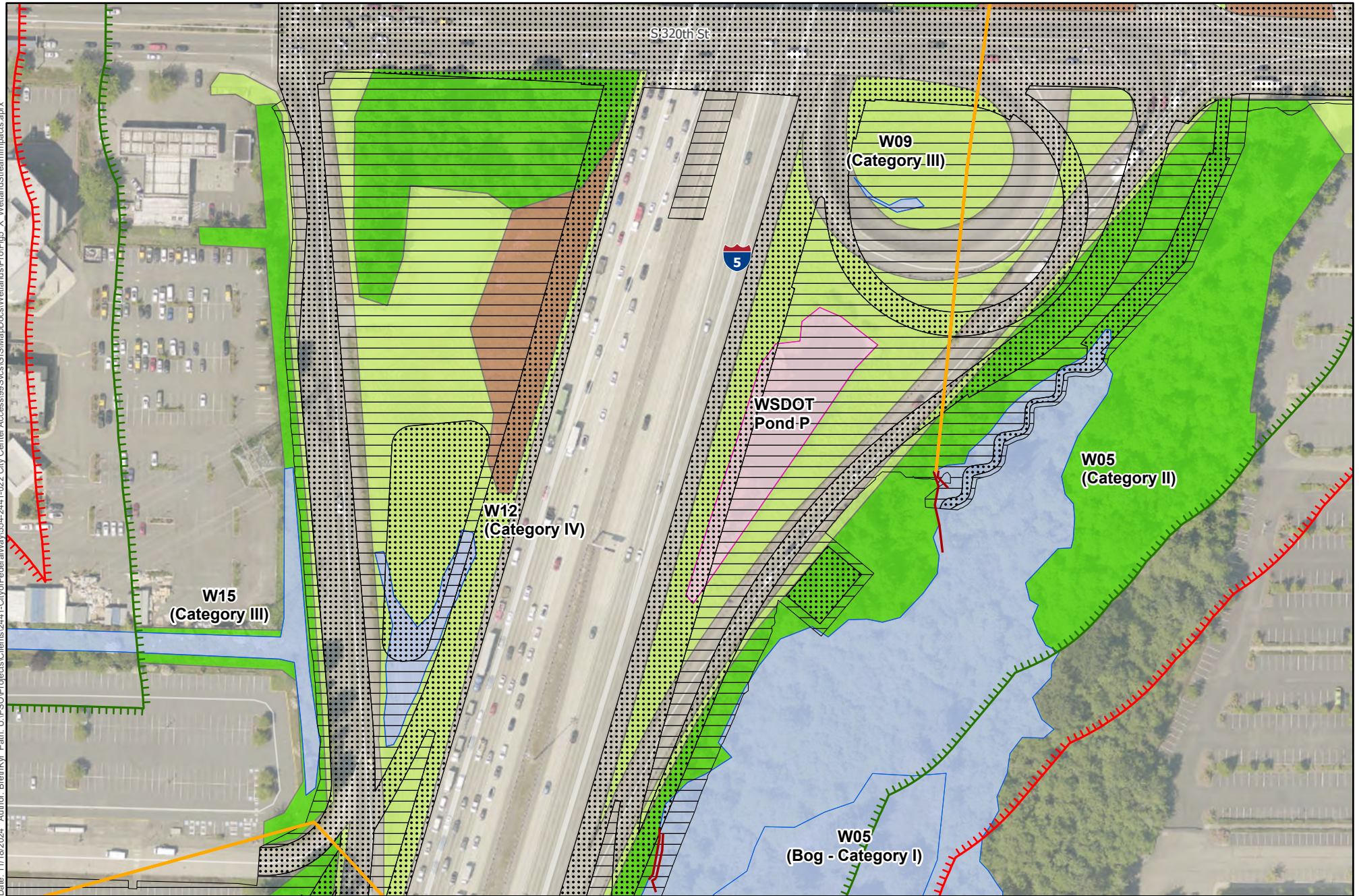
- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area

- Stormwater Feature
- Wetland
- Shrublands
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

- Stream (Pipe)
- Project Footprint Impact Type**
- Temporary, Construction-related
- Permanent Operational

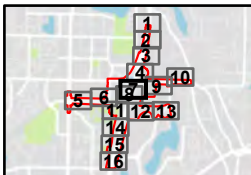
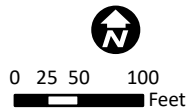
Figure 4-7

Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
(Page 7 of 17)
Federal Way, WA



Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



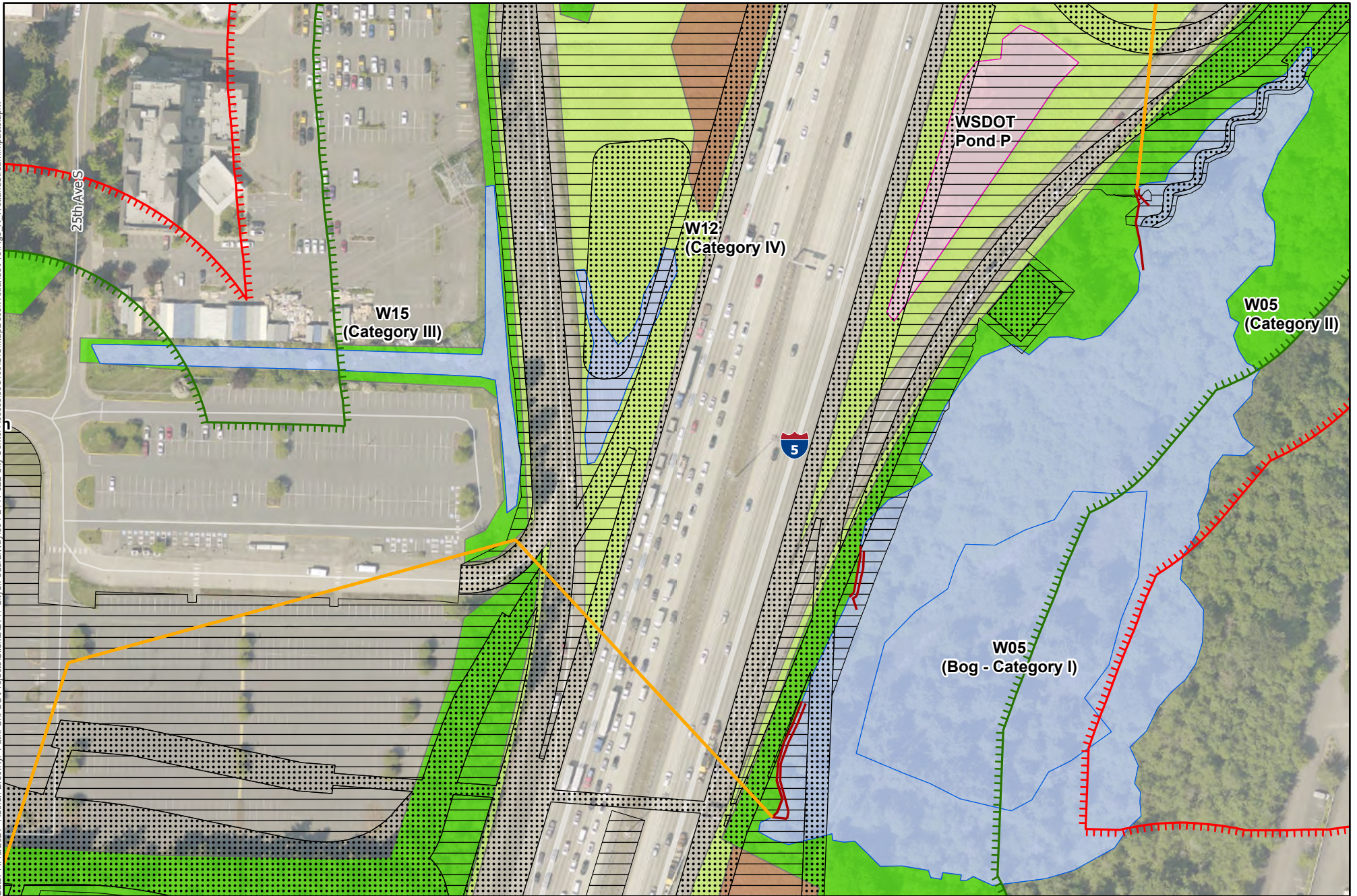
- | | | |
|------------------------------------|---------------------|--------------------------------------|
| Wetland and Stream Study Area | Stormwater Feature | Stream |
| Vegetation and Wildlife Study Area | Wetland | Stream (Pipe) |
| | Shrublands | Project Footprint Impact Type |
| | Upland Grassland | Temporary, Construction-related |
| | Upland Young Forest | Permanent Operational |

Figure 4-8

Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report

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Federal Way, WA



Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap

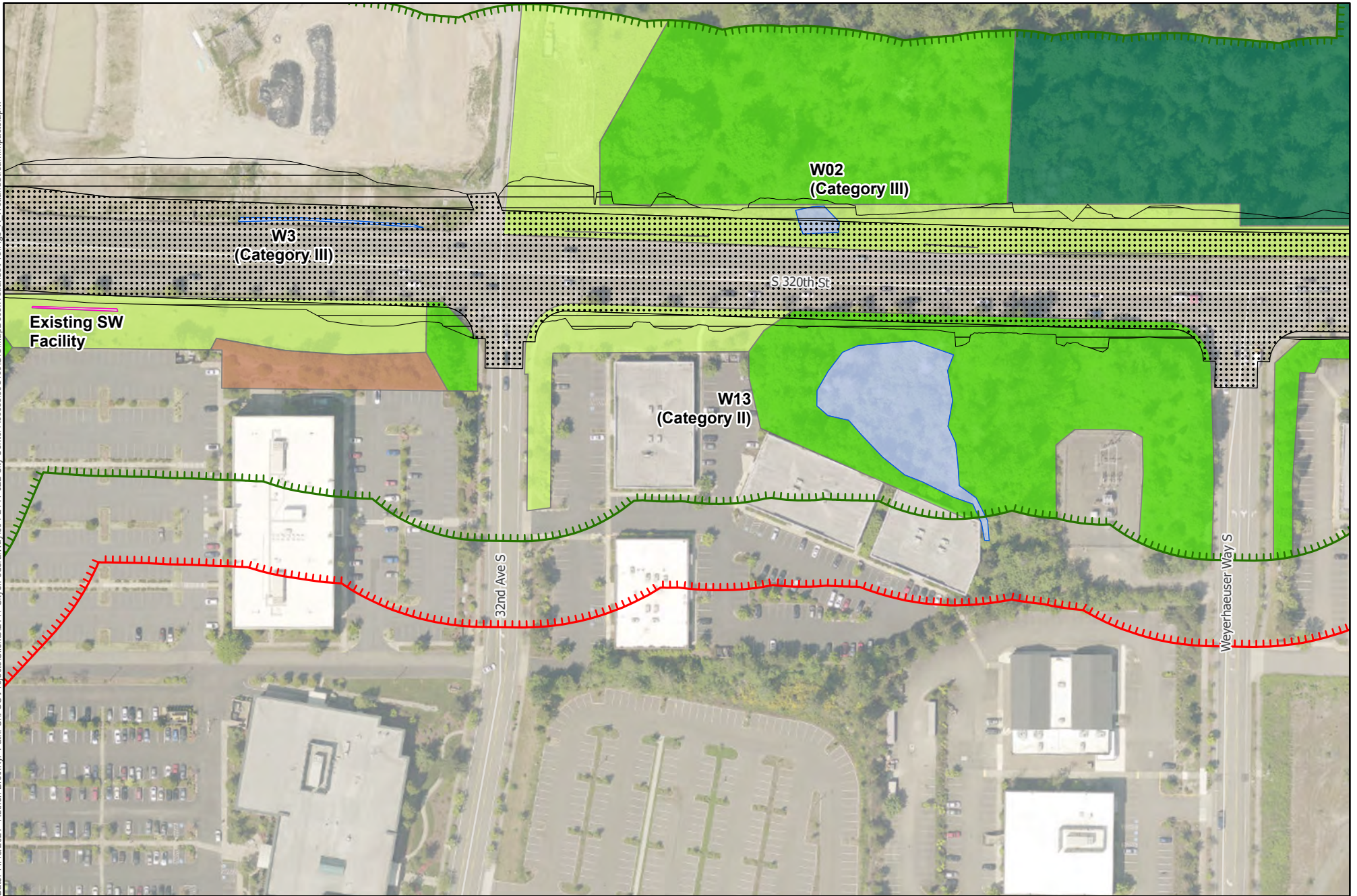


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- | | | |
|------------------------------------|---------------------|--------------------------------------|
| Wetland and Stream Study Area | Stormwater Feature | Stream |
| Vegetation and Wildlife Study Area | Wetland | Stream (Pipe) |
| | Shrublands | Project Footprint Impact Type |
| | Upland Grassland | Temporary, Construction-related |
| | Upland Young Forest | Permanent Operational |

Figure 4-9
Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA

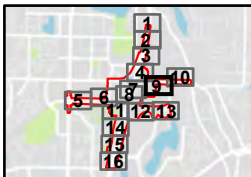


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100 Feet



- W Wetland and Stream Study Area
- W Vegetation and Wildlife Study Area

- Stormwater Feature
- Wetland
- Shrublands
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

Project Footprint Impact Type

- W Temporary, Construction-related
- W Permanent Operational

Figure 4-10
Ecosystem Resource Impacts
Federal Way City Center Access
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Federal Way, WA

Date: 11/18/2024 Author: BrashKyl Path: U:\PSO\Projects\Clients\2441-City of Federal Way\564-2441-022 City Center Access\09\Sves\GIS\MapDocs\Wetlands\ProFig5 X WetlandStreamImpacts.aprx



Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



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Wetland and Stream Study Area



Vegetation and Wildlife Study Area

Wetland

Upland Grassland

Upland Mature Forest

Upland Young Forest

Project Footprint Impact Type

Temporary, Construction-related

Permanent Operational

Figure 4-11
Ecosystem Resource Impacts
Federal Way City Center Access
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Federal Way, WA

Date: 11/18/2024 Author: Breth Ky Path: U:\PSO\Projects\Clients\2441-City of Federal Way\554-2441-022 City Center Access\09 Studies\GIS\MapDocs\Wetlands\ProjFig5 X WetlandStreamImpacts.aprx

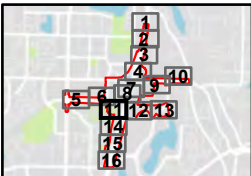


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100 Feet



- | | | |
|------------------------------------|----------------------|--------------------------------------|
| Wetland and Stream Study Area | Wetland | Stream |
| Vegetation and Wildlife Study Area | Shrublands | Stream (Pipe) |
| | Upland Grassland | Project Footprint Impact Type |
| | Upland Mature Forest | Temporary, Construction-related |
| | Upland Young Forest | Permanent Operational |

Figure 4-12
Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA

Date: 11/18/2024 Author: BrethKyl Path: U:\PSO\Projects\Clients\2441-City of Federal Way\564-2441-022 City Center Access\09\Sves\GIS\MapDocs\Wetlands\ProFig5 X WetlandsStreamImpacts.aprx

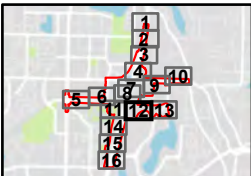


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100
Feet



- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area

- Stormwater Feature
- Wetland
- Shrublands
- Upland Grassland
- Upland Mature Forest
- Upland Young Forest

Project Footprint Impact Type

- Temporary, Construction-related
- Permanent Operational

Figure 4-13
Ecosystem Resource Impacts
Federal Way City Center Access
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Federal Way, WA

Date: 11/18/2024 Author: Breth Ky Path: U:\PSO\Projects\Clients\2441-City of Federal Way\564-2441-022 City Center Access\09_Sites\GIS\MapDocs\Wetlands\ProFig5 X WetlandStreamImpacts.aprx

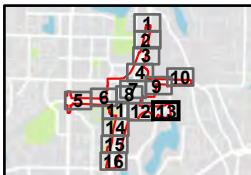


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100
Feet



- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area
- Stormwater Feature
- Wetland
- Upland Grassland
- Upland Mature Forest

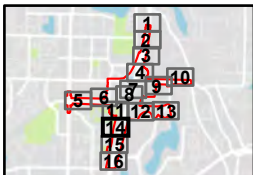
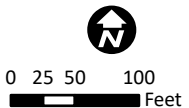
- Stream
- Stormwater Pipe
- Project Footprint Impact Type**
- Temporary, Construction-related
- Permanent Operational







Figure 4-14
Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA



Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



-  Wetland and Stream Study Area
-  Vegetation and Wildlife Study Area
-  Wetland
-  Upland Grassland
-  Upland Mature Forest
-  Upland Young Forest





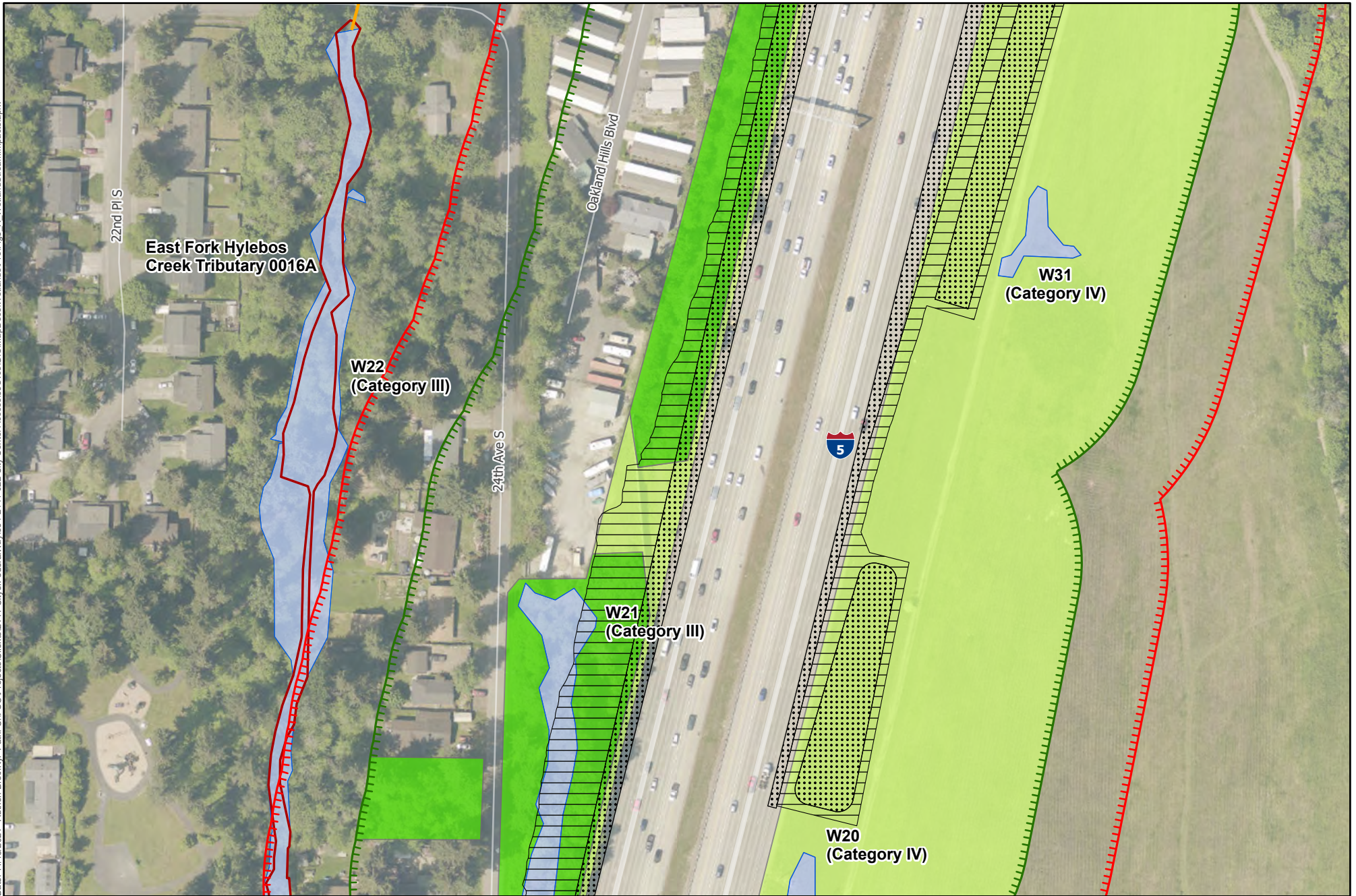
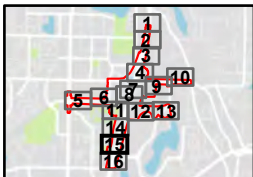
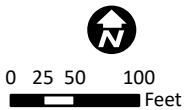
-  Stream
-  Stream (Pipe)
- Project Footprint Impact Type**
-  Temporary, Construction-related
-  Permanent Operational

Figure 4-15
Ecosystem Resource Impacts
Federal Way City Center Access
Project: Ecosystems Report
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Federal Way, WA



Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



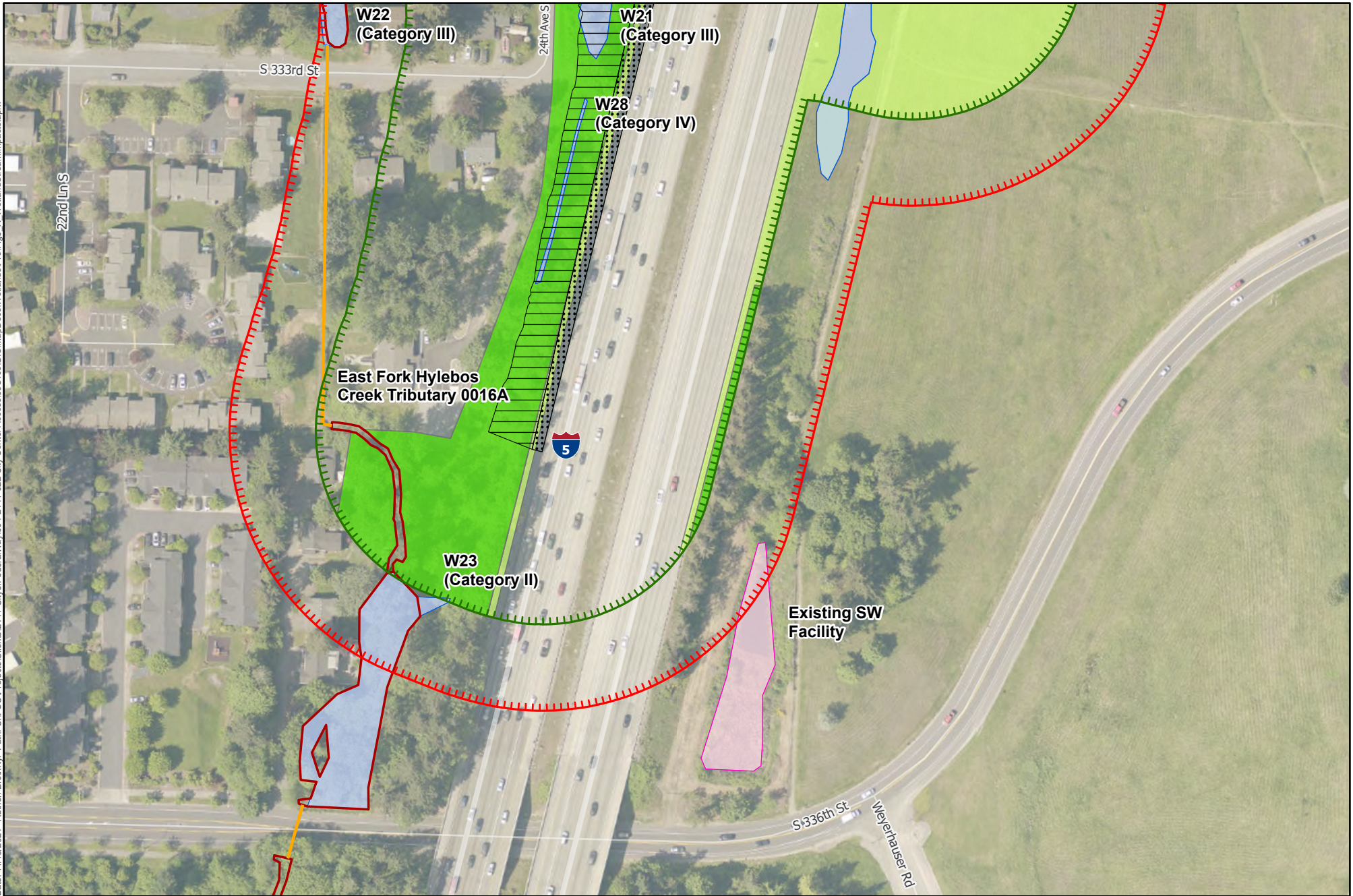
- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area

- Wetland
- Upland Grassland
- Upland Young Forest

- Stream
- Stream (Pipe)
- Project Footprint Impact Type**
- Temporary, Construction-related
- Permanent Operational

Figure 4-16
Ecosystem Resource Impacts
Federal Way City Center Access
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Federal Way, WA

Date: 11/18/2024 Author: BrethKy Path: U:\PSO\Projects\Clients\2441-City of Federal Way\554-2441-022 City Center Access\09\Sves\GIS\MapDocs\Wetlands\ProjFig5 X WetlandsStreamImpacts.aprx

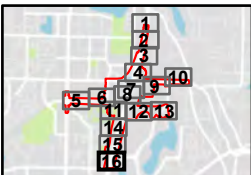


Parametrix

Source: King County, City of Federal Way, © Mapbox, © OpenStreetMap



0 25 50 100
Feet



- Wetland and Stream Study Area
- Vegetation and Wildlife Study Area

- Stormwater Feature
- Wetland
- Upland Grassland
- Upland Young Forest

- Stream
- Stream (Pipe)

- Project Footprint Impact Type**
- Temporary, Construction-related
- Permanent Operational

Figure 4-17
Ecosystem Resource Impacts
Federal Way City Center Access
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4.3 Indirect Impacts on Wetlands and Streams

Indirect impacts include alteration to the wetlands or streams as a result of changes in stormwater management and/or hydrologic changes as a result of revised stream-crossing structures. The stormwater management plan has been developed carefully to maintain or improve the existing hydrologic and chemical connections between the aquatic areas and adjacent paved areas. The plan meets the current stormwater design manual criteria. Due to the presence of a wetland with bog conditions (W5), stormwater in this area was enhanced to meet King County special requirements for stormwater management near bogs. The revised stream-crossing structures were designed to retain the current topography within wetlands and the invert elevations of the new crossing inlets. Installation of groundwater wells and surface water gauges at stream crossings will help inform design as the project design progresses. These considerations should maintain current wetland conditions. Current conditions (some untreated stormwater and undersized culverts) result in short periods of flooding during large storm events due to backwater effects. Post-project conditions would reduce the height and duration of these events, stabilizing the hydroperiod, which would be beneficial for the existing plant communities and wildlife.

4.4 Vegetation and Wildlife Impacts

Habitats, particularly upland forests, would experience both permanent (or operational) impacts and temporary construction impacts. This section considered the following impacts on vegetation and wildlife resources:

- Clearing of vegetation due to paving and stormwater facilities.
- Clearing of vegetation due to construction activities and staging.
- Impacts to significant trees.

Removal of vegetation, especially young and mature forests, would disturb wildlife through the loss of habitat. Impacts to vegetation cover types are shown on Figures 4-1 to 4-17.

4.4.1 Permanent Impacts

The project would result in the permanent displacement of vegetation and wildlife, primarily through a conversion to paved surfaces and stormwater facilities. Over 12 acres of forest habitat would be permanently removed. Of the approximately 12 acres of impacted forest habitat, 6.53 acres are young forest, and 5.80 acres are mature forest. The largest area affected would be where the new segment of S 324th Street is proposed on the east side of I-5, which consists of young Douglas-fir forest near the east side of I-5 and mature Douglas-fir and Western redcedar forest east and west of Weyerhaeuser Way S. In particular, large Douglas-fir and Western redcedar trees within mature forest occur near Weyerhaeuser Way S, where the proposed roundabout is planned. Stormwater facilities located near the proposed roundabout at Weyerhaeuser Way S and north of S 320th Street would also permanently displace mature forest and wildlife. Widening I-5 and installing on- and off-ramps located east of I-5 between S 320th Street and the new S 324th Street segment would require removing a large patch of upland young forest that is dominated by red alder and black cottonwood, which also comprises the buffer of W5.

Other mature forest habitat displaced includes the forested wetland buffers of W5 and W11, north and south of S 320th Street, where the new stream channel and the fish-passable culvert would be installed. Impacts to other vegetation types are minor in contrast and mostly consist of areas that are dominated by non-native grasslands or shrubs adjacent to existing roads.

The project would result in operational impacts on wildlife that use upland forest habitats because there would be an increase in noise from higher traffic volumes and light on existing roads and the new S 324th Street, east of I-5. Wildlife would be adversely affected through vegetation and habitat loss, disruption of travel corridors, noise, and light impacts.

4.4.2 Temporary Construction-Related Impacts

Temporary construction-related impacts consist of ground disturbance, potential for noxious weed spread, and elevated noise from construction, which all may affect wildlife and wildlife habitat. Over 10 acres (6.41 acres of young forest and 4.23 acres of mature forest) would be cleared for construction activities. This includes large-diameter conifer trees (greater than 24 inches). Wildlife utilizing upland forests would be displaced long-term by vegetation and habitat loss, because reestablishment of forest habitat could take years to decades following disturbance.

Vegetation clearing could increase the risk for spread of noxious weeds and provide poor habitat or forage for wildlife. The risk for noxious weed spread would be reduced by preparing the site properly and replanting with native plant species. All temporarily cleared areas would be revegetated with native vegetation, and trees would be replanted following regulations and guidelines from Federal Way, King County, and WSDOT.

The project would result in a temporary increase in noise levels due to construction activities. Noise would travel approximately 4,865 feet from the project footprint before attenuating to ambient noise levels. Construction noise would be less pronounced near I-5, where noise levels are already high. Construction noise may adversely impact birds and other wildlife.

5. Mitigation

The project would comply with federal, state, and local requirements for mitigation of wetland, stream, and buffer impacts. To reduce impacts on streams and wetlands, the project design team worked through mitigation sequencing: avoidance, minimization, rectification, reduction, compensation, and monitoring of impacts (FWC 19.145.130). The project design team avoided impacts on most wetlands and streams in the project areas by adjusting project elements and adding retaining walls and other features to limit the project footprint. This includes avoiding direct impacts to the bog area of W5, which is irreplaceable. The project minimized impacts where they were unavoidable. Ongoing design is expected to further reduce those impacts. The impacts affect only small portions of the wetlands, and short sections of stream are affected, as needed, to improve stream-crossing structures. Temporary, construction-related impacts will be rectified during the project by restoring the original grades and replanting native vegetation in those areas.

Finally, for those unavoidable wetland impacts, the project will provide compensatory mitigation to offset the impacts. The small area of unavoidable impacts to the streams will be mitigated through the design and installation of a major new stream-crossing structure under I-5. The unavoidable impacts on wetlands will be mitigated by using guidance from Federal Way and King County as well as joint guidance from Ecology, USACE, and EPA (2021). Ongoing restoration projects in the Hylebos watershed, the King County in-lieu fee program, and the development of a project-specific mitigation site are possible opportunities for mitigation that comply with federal, state, and local requirements. Following construction and project completion, mitigation sites will be monitored and adaptive management applied to ensure success of the sites.

In general, this project reduces the overall linear feet of culverted stream and will also daylight approximately 1,165 feet of stream channel that would otherwise be culverted. Replacement of current fish-passage barriers with fish-passage culverts will not only support overall salmon recovery goals in WRIA 10 but also in the overall Puget Sound region.

The project would require removal of a large number of trees and will comply with all applicable tree regulation requirements and guidelines set by the City, King County, and WSDOT. In the City, tree replacement is mandated according to specific ratios based on tree size, with more stringent requirements in critical areas to ensure environmental protection. King County requires tree replacement as detailed in its Critical Areas Ordinance, which includes higher ratios for significant trees and sensitive areas, along with comprehensive vegetation management plans. WSDOT's tree replacement policies are project-specific and determined during the environmental review process, emphasizing compliance with state and local regulations to mitigate environmental impacts. Ongoing design will aim to reduce impacts to trees and mitigation measures will be implemented to account for tree loss. Impacts will be avoided to the extent possible using BMPs during construction. This will minimize disruption and ensure ecological integrity.

The project will apply mitigation sequencing, which includes avoiding directly impacting the bog portion of W5. Impacts to wetland and streams that are unavoidable will be fully compensated as required by the regulatory authorities, including local critical area regulations. Project impacts to vegetation and wildlife will be minimized through application of BMPs during construction as well as tree replacement requirements. Therefore, impacts to ecosystem resources are not expected to be significant.

6. Limitations

This ecosystem discipline report documents the investigation, best professional judgment, and conclusions of Parametrix based on the site conditions encountered at the time of this study. The wetland and stream delineation were performed in compliance with accepted standards for professional wetland biologists and applicable federal, state, and local laws and ordinances. The information contained in this report is correct and complete to the best of our knowledge. It should be considered a preliminary jurisdictional determination of wetlands and other waters until it has been reviewed and approved in writing by the appropriate jurisdictional authorities. The final determination of the wetland boundary, classification, and required setback and buffer will be made by local, state, and federal jurisdictions.

7. References

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Appendix A

Background Information

Rainfall Documentation

Date: July 2020

Weather station: Seattle Tacoma
Airport

Period of Record.: 1991-2020

County: King County

State: WA

Growing season: 2/8 to 12/14, 309 days

		Long-term rainfall records							
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	June	0.93	1.44	1.73	2.28	Wet	3	3	9
2nd prior month*	May	1.09	1.88	2.28	3.12	Wet	3	2	6
3rd prior month*	April	2.10	3.18	3.82	1.70	Normal	1	1	1
Sum									16

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

Conclusions: The period prior to July 2020 has been wetter than normal.

Rainfall Documentation

Date: August 2020

Weather station: Seattle Tacoma
Airport

Period of Record.: 1991-2020

County: King County

State: WA

Growing season: 2/8 to 12/14, 309 days

		Long-term rainfall records							
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	July	0.26	0.59	0.69	0.17	Dry	1	3	3
2nd prior month*	June	0.93	1.44	1.73	2.28	Wet	3	2	6
3rd prior month*	May	1.09	1.88	2.28	3.12	Wet	3	1	3
Sum									12

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

Conclusions: The period prior to August 2020 has been normal.

Rainfall Documentation

Date: September 2020

Weather station: Seattle Tacoma
Airport

Period of Record.: 1991-2020

County: King County

State: WA

Growing season: 2/8 to 12/14, 309 days

		Long-term rainfall records							
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	Aug	0.30	0.97	1.12	0.31	Normal	2	3	6
2nd prior month*	July	0.26	0.59	0.69	0.17	Dry	1	2	2
3rd prior month*	June	0.93	1.44	1.73	2.28	Wet	3	1	3

Sum 11

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

Conclusions: The period prior to September 2020 has been normal.

Rainfall Documentation

Date: October 2020

Weather station: Seattle Tacoma
Airport

Period of Record.: 1991-2020

County: King County

State: WA

Growing season: 2/8 to 12/14, 309 days

		Long-term rainfall records							
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	Sep	0.65	1.59	1.89	2.48	Wet	3	3	9
2nd prior month*	Aug	0.30	0.97	1.12	0.31	Normal	2	2	4
3rd prior month*	July	0.26	0.59	0.69	0.17	Dry	1	1	1

Sum **14**

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

Conclusions: The period prior to October 2020 has been normal.

Rainfall Documentation

Date: November 2020

Weather station: Seattle Tacoma
Airport

Period of Record.: 1991-2020

County: King County

State: WA

Growing season: 2/8 to 12/14, 309 days

		Long-term rainfall records							
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	Oct	2.58	3.91	4.70	2.58	Normal	2	3	6
2nd prior month*	Sep	0.65	1.59	1.89	2.48	Wet	3	2	6
3rd prior month*	Aug	0.30	0.97	1.12	0.31	Normal	2	1	2

Sum **14**

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

Conclusions: The period prior to October 2020 has been normal.

Rainfall Documentation

Date: December 2020

Weather station: Seattle Tacoma
Airport

Period of Record.: 1991-2020

County: King County

State: WA

Growing season: 2/8 to 12/14, 309 days

		Long-term rainfall records							
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	Nov	4.68	6.39	7.51	5.58	Normal	2	3	6
2nd prior month*	Oct	2.58	3.91	4.70	2.58	Normal	2	2	4
3rd prior month*	Sep	0.65	1.59	1.89	2.48	Wet	3	1	3
Sum									13

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

Conclusions: The period prior to December 2020 has been normal.

Rainfall Documentation

Date: January 2021

Weather station: Seattle Tacoma
Airport

Period of Record.: 1991-2020

County: King County

State: WA

Growing season: 2/8 to 12/14, 309 days

		Long-term rainfall records						
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value
1st prior month*	Dec	4.01	5.43	6.37	6.65	Wet	3	3
2nd prior month*	Nov	4.68	6.39	7.51	5.58	Normal	2	4
3rd prior month*	Oct	2.58	3.91	4.70	2.58	Normal	2	1
								Sum 15

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

Conclusions: The period prior to January 2021 has been wetter than normal.

Rainfall Documentation

Date: May 2021

Weather station: Seattle Tacoma
Airport

Period of Record.: 1991-2020

County: King County

State: WA

Growing season: 2/8 to 12/14, 309 days

		Long-term rainfall records						
	Month	3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value
1st prior month*	April	2.10	3.18	3.82	0.92	Dry	1	3
2nd prior month*	Mar	3.01	4.16	4.91	2.61	Dry	1	2
3rd prior month*	Feb	2.38	3.76	4.53	4.68	Wet	3	3
								Sum 8

Note: If sum is

6 - 9 then prior period has been
drier than normal
10 - 14 then prior period has been
normal
15 - 18 then prior period has been
wetter than normal

Condition value:

Dry =1
Normal =2
Wet =3

Conclusions: The period prior to May 2021 has been drier than normal.

Precipitation two weeks prior to fieldwork was 0.65 inches.

APPENDIX A-2

Daily Precipitation for 10 Days Preceding Fieldwork, SeaTac International Airport, Washington

To determine whether light, moderate, or heavy precipitation occurred in the 10 days prior to field work, the 10-day total is compared to one-third of the monthly average precipitation for the month evaluated (NRCS 2020a).

Daily precipitation data preceding field work for SeaTac International Airport, Washington

Date (2019)	Daily Precipitation (inches) ^a
April 29	0.00
April 28	0.00
April 27	0.14
April 26	0.00
April 25	0.00
April 24	0.00
April 23	0.00
April 22	0.13
April 21	0.00
April 20	T
Sum	0.27

^a NRCS 2020a

"T" values indicate a trace value was recorded.

Conclusions: One-third of the monthly average precipitation for the month of April is 1.06 inches. Therefore, light precipitation was recorded in the 10 days preceding field work for April 30, 2019.

Daily precipitation data preceding field work for SeaTac International Airport, Washington

Date (2020)	Daily Precipitation (inches) ^a	Date (2020)	Daily Precipitation (inches) ^a
July 23	0.00	September 1	0.00
July 22	0.02	August 31	0.02
July 21	0.00	August 30	T
July 20	0.00	August 29	0.00
July 19	0.00	August 28	0.00
July 18	0.00	August 27	0.00
July 17	0.13	August 26	0.00
July 16	0.00	August 25	0.00
July 15	0.00	August 24	0.00
July 14	0.00	August 23	0.00
Sum	0.15	Sum	0.02

^a NRCS 2020a

"T" values indicate a trace value was recorded.

Conclusions: One-third of the monthly average precipitation for the month of July is 0.20 inch and for the month of August is 0.32 inch. Therefore, light precipitation was recorded in the 10 days preceding field work for July 24, 2020, and September 2, 2020.

Daily precipitation data preceding field work for SeaTac International Airport, Washington

Date (2020)	Daily Precipitation (inches) ^a
August 18	0.00
August 17	0.00
August 16	0.00
August 15	0.00
August 14	0.00
August 13	0.00
August 12	0.00
August 11	0.00
August 10	0.00
August 9	0.00
August 8	0.01
August 7	T
August 6	0.08
August 5	0.00
August 4	0.00
August 3	0.00
August 2	0.00
Sum	0.09

^a NRCS 2020a

"T" values indicate a trace value was recorded.

Conclusions: One-third of the monthly average precipitation for the month of August is 0.32 inch. Therefore, light precipitation was recorded in the 10 days preceding field work for August 13, 18, and 19, 2020.

Daily precipitation data preceding field work for SeaTac International Airport, Washington

Date (2020)	Daily Precipitation (inches) ^a
November 10	0.04
November 9	0.06
November 8	0.00
November 7	0.01
November 6	T
November 5	0.32
November 4	0.18
November 3	0.90
November 2	0.00
November 1	0.00
Sum	1.51

Conclusions: One-third of the monthly average precipitation for the month of November is 2.10 inches. Therefore, light precipitation was recorded in the 10 days preceding field work for November 11, 2020.

Daily precipitation data preceding field work for SeaTac International Airport, Washington

Date (2021)	Daily Precipitation (inches) ^a
January 10	0.12
January 9	0.00
January 8	0.22
January 7	T
January 6	0.19
January 5	0.66
January 4	0.39
January 3	0.44
January 2	1.71
January 1	0.42
December 31 (2020)	0.35
December 30	0.97
December 29	0.16
December 28	0.00
Sum	5.63

^a NRCS 2020a

"T" values indicate a trace value was recorded.

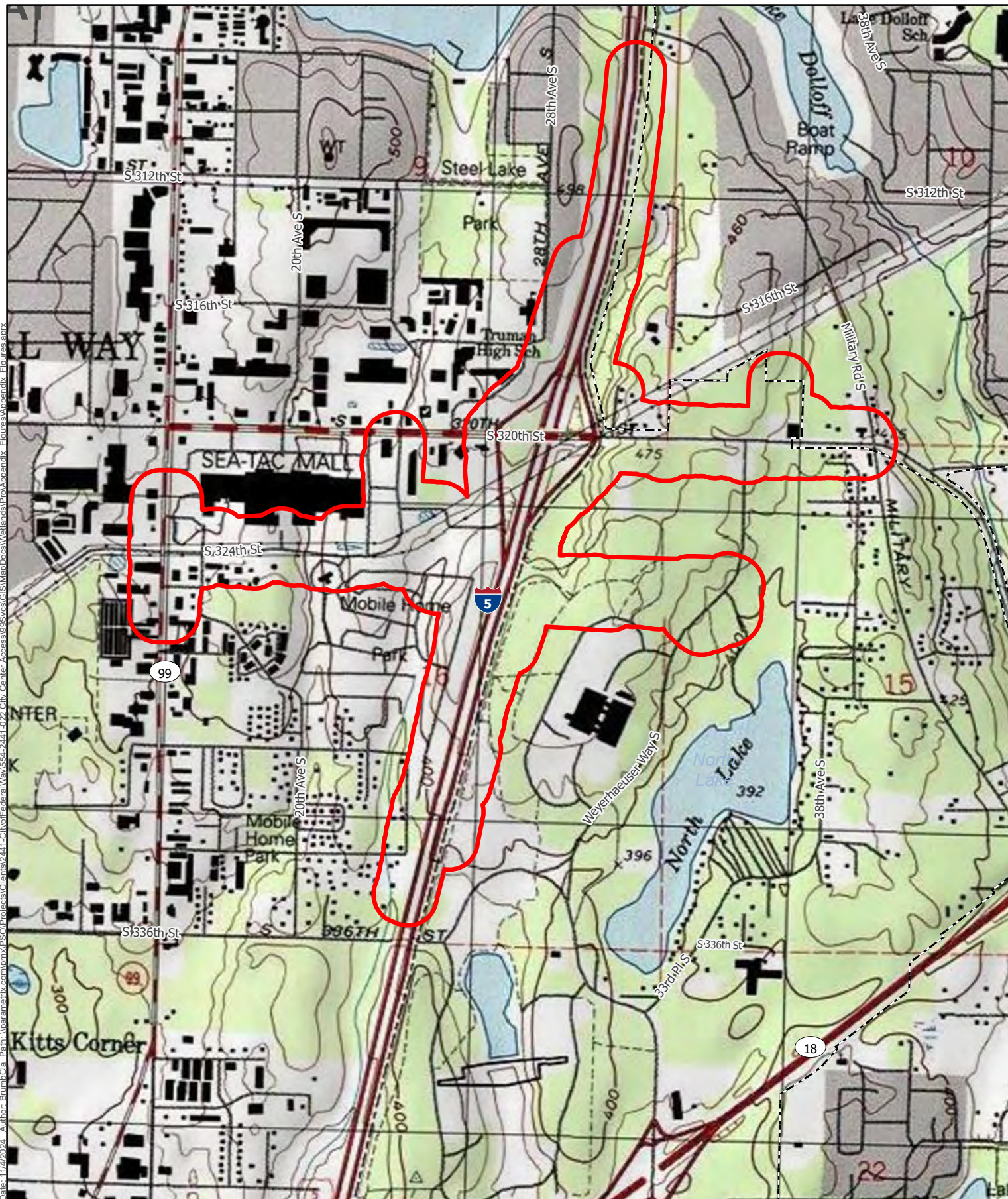
Conclusions: One-third of the monthly average precipitation for the month of January is 2.92 inches. One-third of the monthly average precipitation for the month of December is 2.22 inches. Therefore, heavy precipitation was recorded in the 10 days preceding field work for January 7 and 11 2021.

Daily precipitation data preceding field work for SeaTac International Airport, Washington

Date (2021)	Daily Precipitation (inches) ^a
May 4	0.03
May 3	0.25
May 2	0.00
May 1	0.03
April 30	0.11
April 29	0.00
April 28	0.00
April 27	0.00
April 26	0.00
April 25	0.10
April 24	0.51
April 23	0.04
Sum	1.07

^a NRCS 2020a

Conclusions: One-third of the monthly average precipitation for the month of May is 0.63 inches. One-third of the monthly average precipitation for the month of April is 1.06 inches. Therefore, normal precipitation was recorded in the 10 days preceding field work for May 3 and 5 2021.



Parametrix


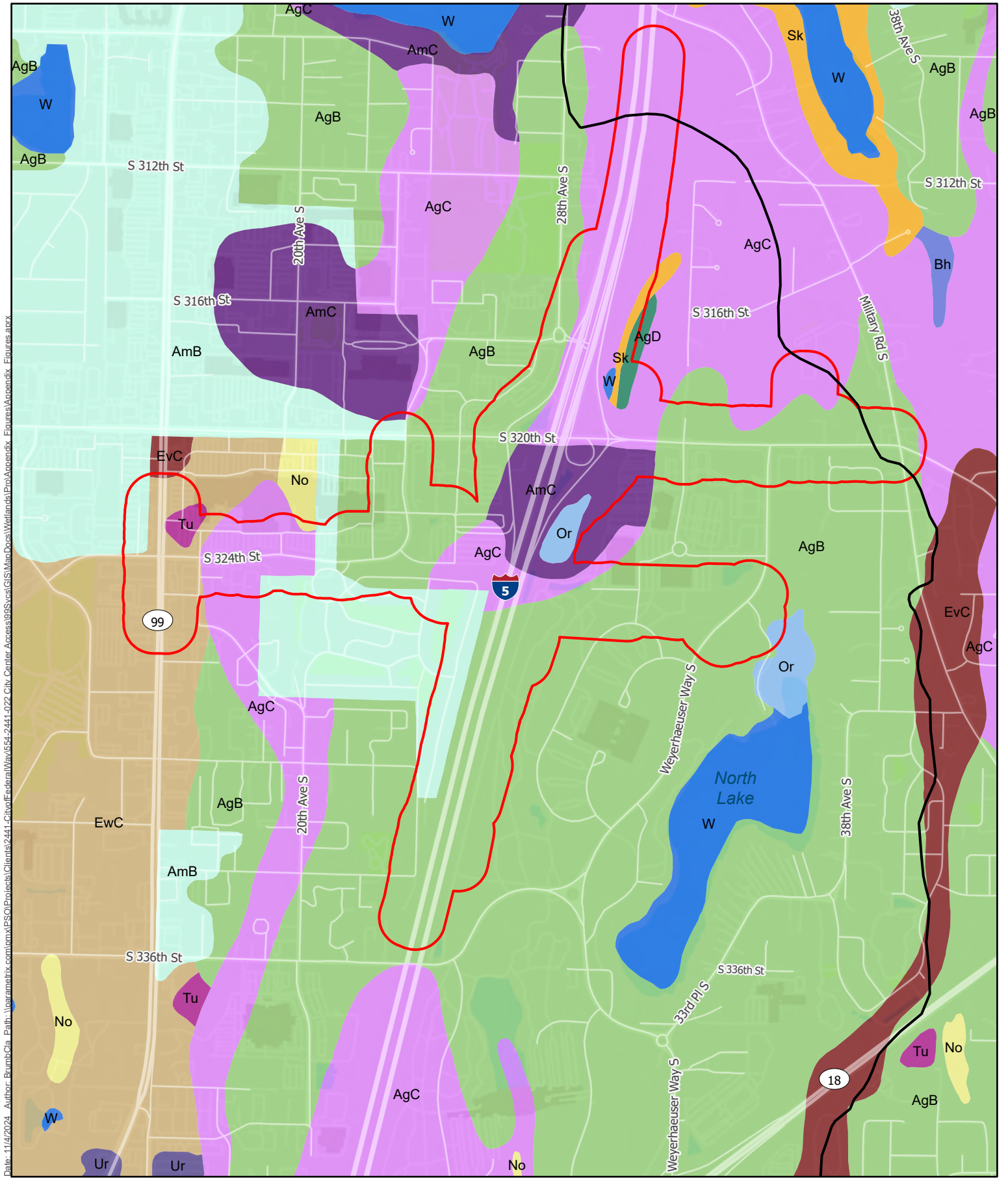
 City Boundary

Figure A-3



Date: 11/14/2024 Author: Brumh-Cia Path: \\parametrix-com\hnx\PSO\Projects\Clients\2441-City of Federal Way\554-2441-022 City Center Access\99\Soil Map\Does\Wellands\Proj\Appendix Figures\apdx

Parametrix
Source: NRCS,
© Mapbox, © OpenStreetMap

0 250 500 1,000
Feet

Study Area
Subbasin Boundary

Map Unit


AgB	Bh	Sk
AgC	EvC	Tu
AgD	EwC	Ur
AmB	No	W
AmC	Or	

Figure A-5
NRCS Soil Survey Map
Federal Way City Center Access
Project: Ecosystems Report
Federal Way, WA

Appendix B

Wetland and Stream Descriptions

Table 1. Wetland W1 Summary

W1 – INFORMATION SUMMARY			
Location:	West of Federal Way Fire Station 4, north of S 320th Street, northeast of Weyerhaeuser Way S		
	Local Jurisdiction	City of Federal Way	
	Local/Ecology Rating	IV	
	Buffer Width	50 feet	
	Wetland Size*	0.16 acres	
	Cowardin Class	PEM, PSS	
	HGM Class	Slope, Depressional	
	Wetland Data Sheet(s)	W1-SP1	
	Upland Data Sheet(s)	W1-SP2, W1-SP3	
Wetland Delineation			
Dominant Vegetation	Shrubs – Himalayan blackberry (<i>Rubus armeniacus</i>) Herbs – reed canarygrass (<i>Phalaris arundinacea</i>), small-fruited bulrush (<i>Scirpus microcarpus</i>), St. John's-wort (<i>Hypericum perforatum</i>), bedstraw (<i>Galium aparine</i>), common foxglove (<i>Digitalis purpurea</i>)		
Soils	A soil matrix color of 10YR 3/2 was observed from 0 to 2 inches below soil surface. From 12 to 14 inches, a soil matrix color of 2.5Y 4/2 with redoximorphic concentrations was observed. A compact gravel layer at 14 inches hindered further exploration, but it is presumed that the depleted matrix extends beyond 14 inches, thus meeting indicator Depleted Below Dark Surface (A11).		
Hydrology	No primary indicators were met for hydrology. Secondary indicators, Geomorphic Position (D2) and FAC-Neutral Test (D5), were recorded.		
Rationale for Delineation	Depressional wetland with hydric soils, supports hydrophytic vegetation, and met secondary hydrology indicators in July 2020. Hydric soils were helpful in determining the wetland boundary.		
Wetland Rating and Functions			
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W1 rates as a Category IV with a habitat score of 4.		
Functions	Water quality functions received a moderate a score of 5. Hydrologic functions received a moderate score of 5. Habitat functions received a moderate score of 4. Function rating details are in Appendix D.		
Wetland Buffers			
Buffer Condition	Buffer ranges from forested areas dominated by native conifers to open grass. Forested buffer provides screening and habitat functions.		

*A portion of the wetland boundary was estimated.

Table 2. Wetland W2 Summary




W2 – INFORMATION SUMMARY		
Location:	West of South King Fire & Rescue Station 64, north of S 320th Street, northwest of Weyerhaeuser Way S	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating	III
	Buffer Width	80 feet
	Wetland Size	0.03 acres
	Cowardin Class	PSS
	HGM Class	Depressional
	Wetland Data Sheet(s)	W2-SP4
	Upland Data Sheet(s)	W2-SP5
Wetland Delineation		
Dominant Vegetation	Trees – black cottonwood (<i>Populus balsamifera</i>) Shrubs – red osier dogwood (<i>Cornus alba</i>), hardhack (<i>Spiraea douglasii</i>), twinberry (<i>Lonicera involucrata</i>), nootka rose (<i>Rosa nutkana</i>) Herbs – bent grass (<i>Agrostis capillaris</i>) and Kentucky bluegrass (<i>Poa pratensis</i>)	
Soils	Soil matrices of 10YR 3/2 (0-2) and 2.5Y 3/2 (2-16) with redoximorphic concentrations and depletions were observed throughout the upper 16 inches of the soil surface. Indicator Depleted Dark Surface (F7) was met.	
Hydrology	Surface Soil Cracks (B6) and Algal Mat or Crust (B4) were identified as primary indicators of hydrology for W2.	
Rationale for Delineation	Depressional wetland with hydric soils, supports hydrophytic vegetation, and has two primary indicators of hydrology during a drier part of the growing season. Hydric soils were helpful in determining the wetland boundary. Wetland soils had matrices of chroma 2. Upland areas directly adjacent had soil matrices of chroma 3.	
Wetland Rating and Functions		
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W2 rates as a Category III, with a habitat score of 5.	
Functions	Water quality functions received a moderate score of 7. Hydrologic functions received a moderate score of 7. Habitat functions received a moderate score of 4. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer conditions range from forested areas dominated by a mixture of native conifers to shrubs to the north. Forested buffer provides screening and habitat functions. S 320th Street is located to the south, with an unpaved utility access road crossing through the wetland unit from the east and west, parallel to S 320th Street.	

Table 3. Wetland W3 Summary

W3 – INFORMATION SUMMARY		
Location:	North of S 320th Street, west of 32nd Avenue S.	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating	III
	Buffer Width	80 feet
	Wetland Size*	0.02 acres
	Cowardin Class	PEM
	HGM Class	Depressional
	Wetland Data Sheet(s)	W3-SP6
	Upland Data Sheet(s)	W3-SP7
Wetland Delineation		
Dominant Vegetation	Herbs – reed canarygrass, common rush (<i>Juncus effusus</i>), bent grass, and bird's-foot trefoil (<i>Lotus corniculatus</i>)	
Soils	Soils were not observed. Assumed hydric.	
Hydrology	W3 was checked with the “other” primary indicator and is assumed to be saturated for a minimum of 5% of the growing season given there are no stormwater controls on S 320th Street, allowing overland flow from uplands into the wetland with no observed outlet present. W3 also met secondary indicators, Geomorphic Position (D2) and FAC-Neutral Test (D5).	
Rationale for Delineation	Depressional wetland with hydric soils, supports hydrophytic vegetation, and is assumed to be saturated for at least 5% of the growing season.	
Wetland Rating and Functions		
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W3 rates as a Category III, with a habitat score of 3.	
Functions	Water quality functions received a high score of 7. Hydrologic functions received a moderate score of 7. Habitat functions received a low score of 3. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is a large hillslope of fill material, located on the north side of S 320 Street. The buffer consists mainly of invasive Himalayan blackberry and native trailing blackberry (<i>Rubus ursinus</i>). This buffer is poor in condition and provides little screening or protection.	


*A portion of the wetland boundary was estimated.

Table 4. Wetland W5 Summary

W5 – INFORMATION SUMMARY		
Location:	East of I-5 exit 142 toward Federal Way/S 320th Street and west of Rockwell Collins, Seattle Service Center parking lot	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating	I/II
	Buffer Width	250 feet/150 feet
	Wetland Size	6.25 acres (bog is 1.76 acres)
	Cowardin Class	PEM, PSS, PFO
	HGM Class	Depressional
	Wetland Data Sheet(s)	W5-SP8
	Upland Data Sheet(s)	W5-SP9
Wetland Delineation		
Dominant Vegetation	<u>Species within the mineral wetland component:</u> Trees – Red alder (<i>Alnus rubra</i>), Oregon Ash (<i>Fraxinus latifolia</i>), European mountain ash (<i>Sorbus aucuparia</i>), willow (<i>Salix sp.</i>) Shrubs – Salmonberry (<i>Rubus spectabilis</i>) Herbs – reed canarygrass, fowl mannagrass (<i>Glyceria elata</i>), skunk cabbage (<i>Lysichiton americanus</i>) <u>Species with the bog component:</u> Trees – Red alder, Western hemlock (<i>Tsuga heterophylla</i>) Shrubs – bog laurel (<i>Kalmia microphylla</i>), bog labrador tea (<i>Rhododendron groenlandicum</i>) Herbs – sphagnum moss	
Soils	A soil matrix of 10Y 5/1 with redoximorphic concentrations was observed throughout the upper 16 inches of the soil surface. These characteristics meet indicators Loamy Gleyed Matrix (F2) and Depleted Matrix (F3).	
Hydrology	A locally shallow water table and stream flow hydrologically support the wetlands. Inundation at 2 inches was observed. Indicators High Water Table (A2), Saturation (A3), and Hydrogen Sulfide Odor (C1) were met. Secondary indicators Dry-Season Water Table (C2), Geomorphic Position (D2), and FAC-Neutral Test (D5) were also met.	
Rationale for Delineation	Depressional wetland with hydric soils, supports hydrophytic vegetation, and has soils saturation in late July during a drier part of the growing season.	
Wetland Rating and Functions		
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W5 rates as a dual rating as Category I/II, with a habitat score of 8.	
Functions	Water quality functions received a high score of 8. Hydrologic functions received a high score of 8. Habitat functions received a high score of 6. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer consists of a forested area. Forested buffer provides screening and habitat functions, protecting the Category II wetland and associated Category I bog.	


*A portion of the wetland boundary was estimated.

Table 5. Wetland W6 Summary

WETLAND W6 – INFORMATION SUMMARY		
Location:	West of Oakland Hills Boulevard, east of Burning Tree Boulevard in Belmor Mobile Home Park	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating*	III
	City of Federal Way Buffer Width	80 feet
	Wetland Size*	0.19 acres
	Cowardin Class	PEM, PSS
	HGM Class	Riverine
	Wetland Data Sheet(s)	W6-SP10
	Upland Data Sheet(s)	W6-SP11
Wetland Delineation		
Dominant Vegetation	Shrubs – Himalayan blackberry, salmonberry, Sitka willow (<i>Salix sitchensis</i>) Herbs – reed canarygrass, giant horsetail (<i>Equisetum telmateia</i>), bittersweet nightshade (<i>Solanum dulcamara</i>)	
Soils	Soil matrices of 10YR 2/1 (0-5) and 10YR 2/2 (5-16) with 10GY 4/1 gleyed depletions in the 5 to 6 inch layer were observed. These characteristics met indicator Redox Dark Surface (F6).	
Hydrology	Supported by stream (East Fork Hylebos Creek Tributary 0016A) flows. Wetland hydrology indicators: High Water Table (A2), Saturation (A3), Dry-Season Water Table (C2), Geomorphic Position (D2), and FAC-Neutral Test (D5).	
Rationale for Delineation	Riverine wetland with hydric soils, supports hydrophytic vegetation, and has soils saturation in July during a drier part of the growing season. Hydric soils were helpful in determining the wetland boundary. Upland areas directly adjacent had soil matrices of chroma 3.	
Wetland Rating and Functions		
Rationale for Local Rating*	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W6 rates as a Category III, with a habitat score of 4.	
Functions*	Water quality functions received a moderate score of 6. Hydrologic functions received a moderate with a score of 7. Habitat functions received a moderate score of 4. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is limited in size by development to the west and includes the golf course lawn to the east within Belmor Mobile Home Park. It contains several large conifers.	

* The northern side of the wetland was delineated by the City Center Access project. For the entire wetland area, wetland boundaries and the wetland rating were adopted from Operations and Management Facility South project through a data-sharing agreement with Sound Transit.

Table 6. Wetland W7 Summary

W7 – INFORMATION SUMMARY		
Location:	Along east shoulder of southbound I-5, adjacent to Exit 143 signage	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating	III
	Buffer Width	80 feet
	Wetland Size*	0.18 acres
	Cowardin Class	PEM
	HGM Class	Depressional
	Wetland Data Sheet(s)	None
	Upland Data Sheet(s)	None
Wetland Delineation		
Dominant Vegetation	Herbs – cattail (<i>Typha latifolia</i>)	
Soils	Soils were not observed due to buried power line and occurrence of wetland within I-5 fill prism. Soils presumed hydric.	
Hydrology	Hydrology provided by stormwater runoff from I-5 and overland flow from adjacent uplands. Outlet is a stormwater catch basin perched approximately 6 inches above wetland surface.	
Rationale for Delineation	Presence of obligate vegetation and saturated soils in geomorphic position with presumed hydric soils.	
Wetland Rating and Functions		
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W7 rates as a Category III, with a habitat score of 3.	
Functions	Water quality functions received a moderate score of 7. Hydrologic functions received a moderate score of 8. Habitat functions received a low score of 3. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is highly disturbed, with I-5 southbound lanes immediately adjacent and forested slope between I-5 and a multifamily development.	

*Wetland boundary estimated.

Table 7. Wetland W9 Summary




W9 – INFORMATION SUMMARY		
Location:	South of S 320th Street, located in the inner portion of the I-5 north on-ramp	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating	III
	Buffer Width	80 feet
	Wetland Size	0.01 acres
	Cowardin Class	PEM
	HGM Class	Slope
	Wetland Data Sheet(s)	W9-SP13
	Upland Data Sheet(s)	W9-SP14
Wetland Delineation		
Dominant Vegetation	Herbs – reed canarygrass	
Soils	Soil matrices of 10YR 4/1 (0 to 4.5 inches) and 10Y 5/1 (4.5 to 16 inches) with 10YR 4/6 redoximorphic concentrations observed throughout the soil profile. These characteristics meet soil indicators: Depleted Below Dark Surface (A11), Loamy Gleyed Matrix (F2), and Depleted Matrix (F3).	
Hydrology	Surface Water (A1) and High Water Table (A2) were identified as primary indicators of hydrology for W9. Secondary indicators Drainage Patterns (B10) and Geomorphic Position (D2) were met.	
Rationale for Delineation	Slope wetland with hydric soils, supports hydrophytic vegetation, and has soils saturation in August during a drier part of the growing season. Hydric soils were helpful in determining the wetland boundary.	
Wetland Rating and Functions		
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W9 rates as a Category III with a habitat score of 3.	
Functions	Water quality functions received a moderate score of 6. Hydrologic functions received a moderate score of 7, and habitat functions received a low score of 3. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is open grass that is confined within an on-ramp to I-5 north. Overall, the buffer provides some screening but is frequently mowed for roadside maintenance and safety.	

Table 8. Wetland W10 Summary

W10 – INFORMATION SUMMARY			
Location:		Located north of S 320th Street, east of the I-5 north on-ramp	
	Local Jurisdiction		City of Federal Way
	Local/Ecology Rating		III
	Buffer Width		80 feet
	Wetland Size		0.23 acres
	Cowardin Class		PAB, PEM, PSS, PFO
	HGM Class		Depressional
	Wetland Data Sheet(s)		W10-SP15
	Upland Data Sheet(s)		W10-SP16
Wetland Delineation			
Dominant Vegetation	Trees – red alder Shrubs – red osier dogwood, pacific willow (<i>Salix lasiandra</i>), Himalayan blackberry Herbs – slough sedge (<i>Carex obnupta</i>), reed canarygrass, creeping buttercup (<i>Ranunculus repens</i>)		
Soils	A soil matrix of 10YR 3/2 with redoximorphic concentrations were observed throughout the upper 16 inches of the soil surface. Indicator Redox Dark Surface (F6) was met.		
Hydrology	High Water Table (A2) and Saturation (A3) were identified as primary indicators of hydrology for W10.		
Rationale for Delineation	Depressional wetland with hydric soils, supports hydrophytic vegetation, and has soils saturation in July during a drier part of the growing season.		
Wetland Rating and Functions			
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. Wetland W10 rates as a Category III, with a habitat score of 5.		
Functions	Water quality functions received a moderate score of 6. Hydrologic functions received a high score of 7. Habitat functions received a moderate score of 5. Function rating details are in Appendix D.		
Wetland Buffers			
Buffer Condition	Buffer consists of a large forest with conifers and mixed deciduous trees. Forested buffer provides screening and habitat functions protecting the wetland.		

*Wetland boundary approximated; area calculation is approximate.

Table 9. Wetland W11 Summary

W11 – INFORMATION SUMMARY		
Location:	North of S 320th Street, east of I-5 north on-ramp, and west of 32nd Avenue S	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating	II
	Buffer Width	150 feet
	Wetland Size*	5.09 acres
	Cowardin Class	PAB, PEM, PSS, PFO
	HGM Class	Depressional
	Wetland Data Sheet(s)	W11-SP17
	Upland Data Sheet(s)	W11-SP18
Wetland Delineation		
Dominant Vegetation	Trees – Oregon ash, red alder, black cottonwood Shrubs – hardhack, salmonberry, Oregon Ash saplings, black cottonwood saplings Herbs – slough sedge, large leaved avens (<i>Geum macrophyllum</i>)	
Soils	A soil matrix of 10YR 2/2 with redoximorphic concentrations starting at 4 inches below soil surface were observed throughout the upper 18 inches of the soil surface. Indicators Redox Dark Surface (F6) and Depleted Dark Surface (F7) were met.	
Hydrology	Secondary indicators Geomorphic Position (D2) and FAC-Neutral Test (D5) were observed. The wetland has permanent ponding.	
Rationale for Delineation	Depressional wetland with hydric soils and supports hydrophytic vegetation.	
Wetland Rating and Functions		
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W11 rates as a Category II with a habitat score of 6.	
Functions	Water quality functions received a moderate score of 8. Hydrologic functions received a high score of 8. Habitat functions received a moderate score of 6. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is primarily a large forest dominated by a mixture of native conifers and shrubs. Forested buffer provides screening and habitat functions.	

*A portion of the wetland boundary was estimated.

Table 10. Wetland W12 Summary




W12 – INFORMATION SUMMARY		
Location:	Between southbound I-5 and S 320th Street on-ramp to southbound I-5	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating	IV
	Buffer Width	50 feet
	Wetland Size	0.20 acres
	Cowardin Class	PEM
	HGM Class	Slope
	Wetland Data Sheet(s)	W12-SP19
	Upland Data Sheet(s)	W12-SP20
Wetland Delineation		
Dominant Vegetation	Herbs – reed canarygrass, colonial bentgrass (<i>Agrostis stolonifera</i>), common rush	
Soils	Soil matrices of 10YR 4/1 with redoximorphic concentrations were observed throughout the upper 16 inches of the soil surface. Indicator Depleted Matrix (F3) was met.	
Hydrology	Oxidized Rhizospheres along Living Roots (C3) was the only primary indicator noted. Secondary indicators include Geomorphic Position (D2) and FAC-Neutral Test (D5).	
Rationale for Delineation	Depressional wetland with hydric soils, supports hydrophytic vegetation, and has oxidized rhizospheres along living roots. Oxidized rhizospheres were a strong indicator in determining the wetland boundary.	
Wetland Rating and Functions		
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023) with buffer widths based in part on the habitat score. W12 rates as a Category IV with a habitat score of 3.	
Functions	Water quality functions received a high a score of 6. Hydrologic functions received a moderate score of 6. Habitat functions received a low score of 3. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is an open pasture that is confined by roadways. Overall, the buffer provides minimal function and is frequently mowed for roadside maintenance and safety.	

Table 11. Wetland W13 Summary

W13 – INFORMATION SUMMARY			
Location:	South of S 320th Street and west of Weyerhaeuser Way S		
	Local Jurisdiction	City of Federal Way	
	Local/Ecology Rating	II	
	Buffer Width	100 feet	
	Wetland Size*	0.45 acres	
	Cowardin Class	PEM, PSS, PFO	
	HGM Class	Depressional	
	Wetland Data Sheet(s)	W13-SP21	
	Upland Data Sheet(s)	W13-SP22	
Wetland Delineation			
Dominant Vegetation	Trees – Bitter cherry (<i>Prunus emarginata</i>) Shrubs – hardhack, pacific willow (<i>Salix scouleriana</i>), red osier dogwood, black cottonwood Herbs – piggyback plant (<i>Tolmiea menziesii</i>), soft rush, slough sedge		
Soils	A soil matrix of 10YR 3/2 with redoximorphic concentrations was observed in the first layer (0 to 7 inches). A soil matrix of 10YR 4/2 with redoximorphic depletions and concentrations were observed on the second layer (7 to 16 inches). Indicators Depleted Below Dark Surface (A11), Depleted Matrix (F3), and Redox Dark Surface (F6) were met.		
Hydrology	Primary indicators Sediment Deposits (B2) and Sparsely Vegetated Concave Surfaces (B8) were met.		
Rationale for Delineation	Depressional wetland with hydric soils, supports hydrophytic vegetation, and has strong primary indicators for hydrology in July 2020 during a drier part of the growing season. Hydric soils were helpful in determining the wetland boundary. Wetland soils had matrices of chroma 2. Upland areas directly adjacent had soil matrices of chroma 3.		
Wetland Rating and Functions			
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W13 rates as a Category II, with a habitat score of 5.		
Functions	Water quality functions received a moderate score of 7. Hydrologic functions received a moderate score of 8. Habitat functions received a moderate score of 5. Function rating details are in Appendix D.		
Wetland Buffers			
Buffer Condition	Buffer is primarily a large forest dominated by a mixture of native conifers and shrubs. The forest provides screening and habitat functions. Buffer to southwest is narrow due to close proximity to development.		


*A portion of the wetland boundary was estimated.

Table 12. Wetland W14 Summary

W14 – INFORMATION SUMMARY		
Location:	North of S 320th Street, east of South King Fire & Rescue Station 64, and west of the intersection of Military Road S and S 320th Street.	
	Local Jurisdiction	King County
	Loca/Ecology Rating	III
	Buffer Width	80 feet
	Wetland Size*	0.26 acres
	Cowardin Class	PSS, PFO
	HGM Class	Depressional
	Wetland Data Sheet(s)	None
	Upland Data Sheet(s)	None
Wetland Delineation		
Dominant Vegetation	Trees – red alder Shrubs – hardhack	
Soils*	Soils not investigated due to lack of entry permission.	
Hydrology*	Hydrology not investigated due to lack of entry permission. Roadside observations suggest seasonal flooding.	
Rationale for Delineation*	Boundary estimated based on hydrophytic vegetation and topographic features.	
Wetland Rating and Functions		
Rationale for Local Rating	KCC 21A.24.325 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023) and determines buffer widths based on both the habitat score and land use intensity. Wetland W14 rates as a Category III, with a habitat score of 5.	
Functions*	Water quality functions received a moderate score of 6. Hydrologic functions received a moderate score of 7. Habitat functions received a moderate score of 5. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is primarily a large forest dominated by a mixture of native conifers and shrubs. Forested buffer provides screening and habitat functions.	

*Wetland boundary and wetland rating estimated. No rights-of-entry obtained.

Table 13. Wetland W15 Summary

W15 – INFORMATION SUMMARY		
Location:	South of S 320th Street, west of the I-5 southbound on-ramp, and east of the I-5 southbound travel lanes.	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating*	III
	Buffer Width	80 feet
	Wetland Size	0.40 acres
	Cowardin Class	PEM, PSS
	HGM Class	Depressional
	Wetland Data Sheet(s)*	None
	Upland Data Sheet(s)*	None
Wetland Delineation		
Dominant Vegetation	Shrubs: hardhack, Himalayan blackberry Herbs: soft rush, cattail, reed canarygrass	
Soils*	Silt and clay loam soils meet hydric soil indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3).	
Hydrology*	Wetland hydrology indicators include High Water Table (A2), Saturation (A3), Drainage Patterns (B10), and FAC-Neutral Test (D5).	
Rationale for Delineation	Presence of hydrophytic vegetation and topographic changes.	
Wetland Rating and Functions		
Rationale for Local Rating*	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W15 rates as a Category III, with a habitat score of 3.	
Functions*	Water quality functions received a moderate score of 7. Hydrologic functions received a moderate score of 8. Habitat functions received a low score of 3. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is limited in size with a few large trees and shrubs. It is located on the far east side of the Best Western Plus Seattle/Federal Way. Overall, the buffer is very small.	

* Wetland boundaries, wetland determination indicators, and wetland rating adopted from Operations and Management Facility South project through a data-sharing agreement with Sound Transit.

Table 14. Wetland W17 Summary




W17 – INFORMATION SUMMARY		
Location:	South of Weyerhaeuser Way S and west of Fishing Access Road	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating	III
	Buffer Width	80 feet
	Wetland Size	0.13 acres
	Cowardin Class	PFO
	HGM Class	Depressional
	Wetland Data Sheet(s)	W17-SP3
	Upland Data Sheet(s)	W17-SP1, W17-SP2
Wetland Delineation		
Dominant Vegetation	Trees – western red cedar (<i>Thuja plicata</i>), red alder Shrubs – salmonberry, vine maple (<i>Acer circinatum</i>)	
Soils	Soil matrices are 10YR 3/2 (0 to 7 inches) and 2.5YR 4/2 (7 to 16 inches) with redoximorphic concentrations in the lower layer. These characteristics meet indicator Depleted Matrix (F3).	
Hydrology	Indicators High Water Table (A2), Saturation (A3), Water Marks (B1), and Sediment Deposits (B2) were met.	
Rationale for Delineation	Depressional wetland with hydric soils, supports hydrophytic vegetation, and has strong primary indicators for hydrology. Wetland boundary was distinct by the steep slope to upland conditions.	
Wetland Rating and Functions		
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W17 rates as a Category III, with a habitat score of 4.	
Functions	Water quality functions received a moderate score of 6. Hydrologic functions received a high score of 7. Habitat functions received a moderate score of 4. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is a mature forest dominated by Douglas-fir (<i>Pseudotsuga menziesii</i>), western red cedar, big leaf maple (<i>Acer macrophyllum</i>), vine maple, salal (<i>Gaultheria shallon</i>), and swordfern (<i>Polystichum munitum</i>). Southern buffer area includes W18. The buffer provides functions such as habitat and screening.	

Table 15. Wetland 18 Summary

W18 – INFORMATION SUMMARY		
Location:	South and east of Weyerhaeuser Way S	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating	II
	Buffer Width	150 feet
	Wetland Size*	13.10 acres
	Cowardin Class	PAB, PSS, PFO
	HGM Class	Depressional
	Wetland Data Sheet(s)	W18-SP2, W18-SP3, W18-SP5
	Upland Data Sheet(s)	W18-SP1, W18-SP4, W18-SP6
Wetland Delineation		
Dominant Vegetation	Trees – western red cedar, red alder Shrubs – vine maple, salmonberry, hardhack Herbs – soft rush, creeping buttercup	
Soils	Soils were examined at several locations within the wetland. Indicators met include Redox Depressions (F8), Depleted Matrix (F3), and Depleted Below Dark Surface (A11).	
Hydrology	Indicators met include High Water Table (A2), Saturation (A3), and Water Marks (B1).	
Rationale for Delineation	Depressional wetland with hydric soils, supports hydrophytic vegetation, and has strong primary indicators for hydrology. Wetland boundaries are marked by a steep slope (north) and fishing access road (east). Wetland extends to water edge at North Lake.	
Wetland Rating and Functions		
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W18 rates as a Category II, with a habitat score of 7.	
Functions	Water quality functions received a moderate score of 7. Hydrologic functions received a high a score of 8. Habitat functions received a high score of 7. Function rating details are in Appendix D.	
Wetland Buffers		
Buffer Condition	Buffer is a large, forested area dominated by Douglas-fir, western red cedar, big leaf maple, vine maple, salal, and swordfern. Southern buffer area includes North Lake. Western buffer boundary is marked by Weyerhaeuser Way S.	

*A portion of the wetland boundary was estimated.

Table 16. Wetland 19 Summary

W19 – INFORMATION SUMMARY			
Location:		South and west of Weyerhaeuser Way S.	
	Local Jurisdiction		City of Federal Way
	Local/Ecology Rating		II
	Buffer Width		150 feet
	Wetland Size*		15.25 acres
	Cowardin Class		PAB, PEM, PSS, PFO
	HGM Class		Depressional
	Wetland Data Sheet(s)		W19-SP1, W16-SP2
	Upland Data Sheet(s)		W19-SP2, W16-SP1
Wetland Delineation			
Dominant Vegetation		Trees – western red cedar, red alder, Douglas-fir Shrubs – vine maple, salmonberry, hardhack Herbs – soft rush, creeping buttercup, sword fern	
Soils		Organic soils were observed from 0 to 8 inches below the soil surface. Mineral soils were dark (10YR 2/2 and 10YR 3/1) and contained redoximorphic concentrations. Soils met hydric soil indicators Histic Epipedon (A2) and Redox Dark Surface (F6).	
Hydrology		Indicators met include High Water Table (A2), Saturation (A3), Water Marks (B1), and Presence of Reduced Iron (C4).	
Rationale for Delineation		Depressional wetland with hydric soils, supports hydrophytic vegetation, and has strong primary indicators for hydrology. Hydrology indicators and hydric soils helped to determine wetland boundary.	
Wetland Rating and Functions			
Rationale for Local Rating		FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W19 rates as a Category II, with a habitat score of 7.	
Functions		Water quality functions received a moderate score of 7. Hydrologic functions received a high score of 8. Habitat functions received a high score of 7. Function rating details are in Appendix D.	
Wetland Buffers			
Buffer Condition		Buffer is a large, forested area dominated by Douglas-fir, western red cedar, big leaf maple, vine maple, salal, and swordfern. Southern buffer area includes North Lake. Eastern buffer boundary is lined with single-family residential.	

*A portion of the wetland boundary was estimated.

Table 17. Wetland 20 Summary




W20 – INFORMATION SUMMARY			
Location:		East of I-5 northbound, within WSDOT right-of-way	
		Local Jurisdiction	City of Federal Way
		Local/Ecology Rating	IV
		Buffer Width	50 feet
		Wetland Size	0.17 acres
		Cowardin Class	PEM
		HGM Class	Slope
		Wetland Data Sheet(s)	W20-SP1
		Upland Data Sheet(s)	W20-SP2, W20-SP3
Wetland Delineation			
Dominant Vegetation	Herbs – reed canarygrass, Kentucky bluegrass, velvetgrass (<i>Holcus lanatus</i>)		
Soils	Soils were examined to have three layers. All layers are depleted with matrices of 2.5Y 4/1 (0 to 6 inches), 2.5Y 5/2 (6 to 10 inches), and 5Y 5/1 (10 to 16 inches). Redoximorphic features are present at 6 inches and below. These soil characteristics meet hydric soil indicator F3, Depleted Matrix.		
Hydrology	Indicators met include High Water Table (A2), Saturation (A3), Algal Mat or Crust (B4), and Oxidized Rhizospheres along Living Roots (C3).		
Rationale for Delineation	Slope wetland with hydric soils, supports hydrophytic vegetation, and has indicators for hydrology. Hydrology indicators helped to determine wetland boundary.		
Wetland Rating and Functions			
Rationale for Local Rating	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W20 rates as a Category IV, with a habitat score of 3.		
Functions	Water quality functions received a moderate score of 6. Hydrologic functions received a low score of 6. Habitat functions received a low score of 3. Function rating details are in Appendix D.		
Wetland Buffers			
Buffer Condition	Buffer is a maintained mown easement adjacent to I-5 northbound. Southern buffer area includes some shrubs.		

Table 18. Wetland 21 Summary

W21 – INFORMATION SUMMARY		
Location:	West of I-5 southbound and east of 24th Avenue S	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating*	III
	Buffer Width	80 feet
	Wetland Size	0.34 acres
	Cowardin Class	PEM, PFO
	HGM Class	Depressional
	Wetland Data Sheet(s)*	None
	Upland Data Sheet(s)*	None
Wetland Delineation		
Dominant Vegetation*	Trees – back cottonwood, red alder, and Oregon ash Shrubs – Sitka willow, hardhack, and Himalayan blackberry Herbs – reed canarygrass	
Soils*	Dark and depleted loam soils met hydric soil indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3).	
Hydrology*	Wetland hydrology indicators observed include High Water Table (A2), Saturation (A3), Geomorphic Position (D2) and FAC-Neutral Test (D5).	
Rationale for Delineation*	Depressional wetland with observed hydrophytic vegetation and wetland hydrology.	
Wetland Rating and Functions		
Rationale for Local Rating*	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W21 rates as a Category III, with a habitat score of 5.	
Functions*	Water quality functions received a moderate score of 6. Hydrologic functions received a moderate score of 7. Habitat functions received a low score of 5.	
Wetland Buffers		
Buffer Condition	The vegetated buffer is confined by I-5 to the east and 24th Avenue S to the west. Vegetation within the buffer includes Douglas-fir with salal, vine maple, beaked hazelnut (<i>Corylus cornuta</i>), trailing blackberry, snowberry (<i>Symphoricarpos albus</i>), and dull Oregon grape (<i>Mahonia nervosa</i>) in the understory. The buffer contains an abundance of large and small woody debris.	


* Wetland boundaries, wetland determination indicators, and wetland rating adopted from Operations and Management Facility South project through a data-sharing agreement with Sound Transit.

Table 19. Wetland 22 Summary

W22 – INFORMATION SUMMARY			
Location:		North of S 333rd Street and west of Cedar Grove Park	
	Local Jurisdiction		City of Federal Way
	Local/Ecology Rating*		III
	Buffer Width		80 feet
	Wetland Size*		0.95 acres
	Cowardin Class		PFO
	HGM Class		Riverine
	Wetland Data Sheet(s)*		None
	Upland Data Sheet(s) *		None
Wetland Delineation			
Dominant Vegetation	Trees – black cottonwood, red alder, Oregon ash, Western red cedar Shrubs – salmonberry, Sitka willow, Himalayan blackberry Herbs – lady fern (<i>Athyrium felix-femina</i>), slough sedge, reed canarygrass, and Kentucky bluegrass		
Soils*	Upper layers of soils are dark and lower layers are depleted. Hydric soils indicators include Hydrogen Sulfide (A4), Thick Dark Surface (A12), Redox Dark Surface (F6), and Depleted Below Dark Surface (A11).		
Hydrology*	Wetland receives flooding from East Fork Hylebos Creek Tributary 0016A. Wetland hydrology indicators include Surface Water (A1), High Water Table (A2), Saturation (A3), Geomorphic Position (D2), and FAC-Neutral Test (D5).		
Rationale for Delineation*	Break in topography and transition to lack of wetland hydrology and hydric soils.		
Wetland Rating and Functions			
Rationale for Local Rating*	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. Wetland W22 rates as a Category III, with a habitat score of 5.		
Functions*	Water quality functions received a moderate score of 6. Hydrologic functions received a moderate score of 8. Habitat functions received a low score of 5. A high density of trees supports filtration of pollutants from surrounding land uses as well as flood attenuation. The wetland has low habitat functions due to lack of diverse vegetation communities, structure, and connectivity.		
Wetland Buffers			
Buffer Condition*	The buffer abuts residential development on all sides but is vegetated with an abundance of large and small woody debris. The riparian corridor is a native forest dominated by red alder.		


* Wetland boundaries, wetland determination indicators, and wetland rating adopted from Operations and Management Facility South project through a data-sharing agreement with Sound Transit.

Table 20. Wetland 23 Summary

W23 – INFORMATION SUMMARY		
Location:	West of I-5 southbound and north of S 336th Street	
	Local Jurisdiction	City of Federal Way
	Local/Ecology Rating*	II
	Buffer Width	150 feet
	Wetland Size*	0.38 acres
	Cowardin Class	PSS, PFO
	HGM Class	Riverine
	Wetland Data Sheet(s)*	None
	Upland Data Sheet(s)*	None
Wetland Delineation		
Dominant Vegetation*	Trees – black cottonwood, red alder Shrubs – Sitka willow, Douglas spirea, salmonberry, and Himalayan blackberry Herbs – reed canarygrass	
Soils*	Hydric soils in Wetland W23 are dark or depleted silt, clay, or gravelly sandy loams, meeting hydric soil indicators Depleted Below Dark Surface (A11) and Redox Dark Surface (F6).	
Hydrology*	Wetland hydrology is supported by overbank flooding. Wetland hydrology indicators are Saturation (A3), High Water Table (A2), and Geomorphic Position (D2).	
Rationale for Delineation*	Break in topography, transition to dry and upland soils.	
Wetland Rating and Functions		
Rationale for Local Rating*	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. Wetland W23 rates as a Category III, with a habitat score of 6.	
Functions*	Water quality functions received a moderate score of 7. Hydrologic functions received a moderate score of 7. Habitat functions received a moderate score of 6. W23 provides water quality functions, including pollutant filtration and flood water attenuation. It provides functional complex habitat but lacks inter-habitat connection with nearby habitats.	
Wetland Buffers		
Buffer Condition	The buffer is vegetated with a forest canopy dominated by red alder and understory dominated by red elderberry (<i>Sambucus racemosa</i>), salmonberry and Himalayan blackberry. The functional buffer is limited to I-5 to the east and residential development to the west.	


* Wetland boundaries, wetland determination indicators, and wetland rating adopted from Operations and Management Facility South project through a data-sharing agreement with Sound Transit.

Table 21. Wetland 28 Summary

W28 – INFORMATION SUMMARY			
Location:		East of S 333rd Street and west of I-5	
	Local Jurisdiction		City of Federal Way
	Local/Ecology Rating		IV
	Buffer Width		50 feet
	Wetland Size*		0.02 acres
	Cowardin Class		PSS
	HGM Class		Slope
	Wetland Data Sheet(s)*		None
	Upland Data Sheet(s)*		None
Wetland Delineation			
Dominant Vegetation*		Shrubs – Himalayan blackberry and reed canarygrass	
Soils*		Sandy loam and clay hydric soils met the following indicators: Depleted Below Dark Surface (A11) and Depleted Matrix (F3).	
Hydrology*		Wetland hydrology indicators are Saturation (A3), Sparsely Vegetated Concave Surface (B8), and Geomorphic Position (D2).	
Rationale for Delineation*		Break in topography and transition to dry soils.	
Wetland Rating and Functions			
Rationale for Local Rating*		FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W28 rates as a Category IV, with a habitat score of 3.	
Functions*		Water quality functions received a low score of 5. Hydrologic functions received a moderate score of 6. Habitat functions received a low score of 3. W28 is a slope wetland, which limits its ability to filter and store pollutants. Its position in the landscape allows it to partially capture floodwaters and reduce flooding downgradient. It provides limited habitat function due to lack of habitat complexity and connection to other habitats.	
Wetland Buffers			
Buffer Condition		The vegetated upland buffer is confined by the I-5 corridor to the east and residential development to the west. Existing vegetation includes a native canopy of Douglas-fir and Western red-cedar with an understory of Himalayan blackberry and swordfern.	


* Wetland boundaries, wetland determination indicators, and wetland rating adopted from Operations and Management Facility South project through a data-sharing agreement with Sound Transit.

Table 22. Wetland 29 Summary

W29 – INFORMATION SUMMARY			
Location:	East of 23rd Avenue S and south of S 322nd Street.		
	Local Jurisdiction	City of Federal Way	
	Local/Ecology Rating	III	
	Buffer Width	80 feet	
	Wetland Size*	0.03 acres	
	Cowardin Class	PEM, PSS	
	HGM Class	Depressional	
	Wetland Data Sheet(s)*	none	
	Upland Data Sheet(s)*	none	
Wetland Delineation			
Dominant Vegetation*	Shrubs – Himalayan blackberry, hardhack Herbs – creeping buttercup, ribwort plantain (<i>Plantago lanceolata</i>), soft rush		
Soils*	Loam hydric soils meet hydric soil indicators Depleted Matrix (F3) and Depleted Below Dark Surface (A11).		
Hydrology*	Stormwater and a high groundwater table support wetland hydrology. Wetland hydrology indicators include High Water Table (A2), Saturation (A3), and Geomorphic Position (D2).		
Rationale for Delineation*	Geomorphic position and transition to dry soils		
Wetland Rating and Functions			
Rationale for Local Rating*	FWRC 19.145.420 classifies wetlands based on the Washington Department of Ecology Wetland Rating System (Hruby and Yahnke 2023), with buffer widths based in part on the habitat score. W29 rates as a Category III, with a habitat score of 3.		
Functions*	Water quality functions received a moderate score of 6. Hydrologic functions received a moderate of 7. Habitat functions received a low score of 3. W29 has some ability to attenuate stormwater flows and filter pollutants. However, it has limited habitat function due to lacking plant diversity and connections to other habitats.		
Wetland Buffers			
Buffer Condition	The vegetated buffer is mostly sloped, consisting mainly of Himalayan blackberry, rose species, and common lawn grass species. The stormwater pond located north of the wetland is dominated by cattail.		

* Wetland boundaries and wetland rating adopted from Operations and Management Facility South project through a data-sharing agreement with Sound Transit.

Table 29. East Fork Hylebos Creek Tributary 0016A Summary

East Fork Hylebos Creek Tributary 0016A – Information Summary		
	Stream Name	East Fork Hylebos Creek Tributary 0016A
	WRIA Name/Stream #	10.0016A
	WDFW Site ID	995300, 995299, and 992364
	Local Jurisdiction	Federal Way
	DNR Water Type	F
	Local Stream Rating	F
	Buffer Width	100 feet
	Documented Fish Use^a	None
Location of Stream Relative to Study Area	<p>East Fork Hylebos Creek Tributary 0016A flows through the project study area from northeast to southwest, flowing through three partial fish passage barriers. The intermittently flowing stream generally flows northeast to southwest through the study area. W11, located north of S 320th Street and east of I-5 is the headwaters of East Fork Hylebos Creek Tributary (0016A). The upper limits of the defined stream channel begin at the outlet of the S 320th Street crossing, where flow enters W5. The stream flows through a palustrine scrub-shrub vegetation community and partially into the delineated bog interior within W5. It exits the wetland and travels through approximately 1,640 linear feet of pipe below I-5 and the King County Metro park and ride. East Fork Hylebos Creek continues to flow on the east side of I-5 and converges with West Fork Hylebos Creek near the Porter Way crossing of I-5. From this point, the stream continues as Hylebos Creek, crossing back to the west side of I-5 and discharging to the Hylebos Waterway in Tacoma.</p>	
Connectivity	<p>Several species of salmon and winter steelhead may potentially be present in East Fork Hylebos Creek Tributary 0016A, based upon accessible stream gradient (NWIFC 2024). However, there is no documented or presumed fish use within the study area. Downstream human-created barriers to fish passage prevent anadromous salmonids from entering stream reaches in the study area.</p>	
Fish Habitat	<p>The riparian buffer condition in the study area ranges from highly modified to relatively undisturbed conditions. East of I-5, the upper limits of East Fork Hylebos Creek Tributary 0016A flow through large wetland complexes with forested, scrub-shrub, emergent, and aquatic bed vegetation communities with abundant shade, wood material, and organic matter accumulations. West of I-5, the stream enters an incised straightened channel with a narrow fringe of riparian forest buffer surrounded by residential and recreational land uses.</p>	

^a Documented fish species known to occur in the stream from available data sources (WDFW 2024a,c; NWIFC 2024)

Appendix C

Wetland Determination Data Forms

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 7/24/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W1-SP-1
 Investigator(s): Matt Murphy, Aaron Thom Section, Township, Range: T21N R04E S10
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315586 Long: -122.287857 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:

W1-SP-1 is located in the middle of a reed canarygrass (*Phalaris arundinacea*) patch within a shallow depression approximately 120 feet north of S 320th St and west of S King County Fire and Rescue Station 64. A french drain has been installed along the eastern boundary of the Wetland W1 unit, extending north and south.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Phalaris arundinacea</u>		100%	Yes	FACW	
2. <u>Juncus effusus</u>		10%	No	FACW	
3. <u>Hypericum perforatum</u>		1%	No	FACU	
4. <u>Galium aparine</u>		1%	No	FACU	
5. <u>Digitalis purpurea</u>		1%	No	FACU	
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		113% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL							Sampling Point:	W1-SP-1
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 ³	Remarks
0-12	10YR 3/2	100					CbL	
12-14	2.5Y 4/2	85	10YR 5/5	15	C	M	GrSiL	
<div><div>¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.</div><div>²Location: PL=Pore Lining, M=Matrix.</div><div>³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)</div></div>								
Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):						Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			<div>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</div>		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
<div>Restrictive Layer (if present):<div>Type: <u>compacted cobbles</u> Depth (inches): <u>14</u></div></div>						<div>Hydric Soil Present?<div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div></div>		
Remarks:								
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of one required; check all that apply)						Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1)			<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)			<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)		
<input type="checkbox"/> High Water Table (A2)			<input type="checkbox"/> Salt Crust (B11)			<input type="checkbox"/> Drainage Patterns (B10)		
<input type="checkbox"/> Saturation (A3)			<input type="checkbox"/> Aquatic Invertebrates (B13)			<input type="checkbox"/> Dry-Season Water Table (C2)		
<input type="checkbox"/> Water Marks (B1)			<input type="checkbox"/> Hydrogen Sulfide Odor (C1)			<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Sediment Deposits (B2)			<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)			<input checked="" type="checkbox"/> Geomorphic Position (D2)		
<input type="checkbox"/> Drift Deposits (B3)			<input type="checkbox"/> Presence of Reduced Iron (C4)			<input type="checkbox"/> Shallow Aquitard (D3)		
<input type="checkbox"/> Algal Mat or Crust (B4)			<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)			<input checked="" type="checkbox"/> FAC-Neutral Test (D5)		
<input type="checkbox"/> Iron Deposits (B5)			<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)			<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)		
<input type="checkbox"/> Surface Soil Cracks (B6)			<input type="checkbox"/> Other (Explain in Remarks)			<input type="checkbox"/> Frost-Heave Hummocks (D7)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)								
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)								
<div>Field Observations:<div>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/></div></div>						<div>Wetland Hydrology Present?<div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div></div>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks: Hydrology assumed to be present for 5% minimum of growing season based on hydric vegetetaion and hydric soil.								

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 7/24/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W1-SP-2
 Investigator(s): Matt Murphy, Aaron Thom Section, Township, Range: T21N R04E S10
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315468 Long: -122.287727 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:

Upland sample plot paired with W1-SP-2 and W1-SP-3. Sample plot is located SE and downslope of W1-SP-1.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Rubus armeniacus</u>		40%	Yes	FAC	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		40% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>Agrostis stolonifera</u>		100%	Yes	FAC	
2. <u>Jacobaea vulgaris</u>		20%	No	FACU	
3. <u>Hypericum perforatum</u>		2%	No	FACU	
4. <u>Juncus effusus</u>		1%	No	FACW	
5. <u>Holcus lanatus</u>		1%	No	FAC	
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		124% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

SOIL

Sampling Point:W1-SP-2

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 ³	Remarks
0-11	10YR 3/2	100					CbL	
11-13	2.5Y 4/2	85	10YR	15	C	M	GrSiL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

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 MLRA 1)

Loamy Gleyed Matrix (F2)

Depleted Matrix (F3)

Redox Dark Surface (F6)

Depleted Dark Surface (F7)

Redox Depressions (F8)

2 cm Muck (A10)

Red Parent Material (TF2)

Very Shallow Dark Surface (TF12)

Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: compacted cobbles

Depth (inches):13

Hydric Soil Present?

YesXNo

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

Surface Water (A1)

High Water Table (A2)

Saturation (A3)

Water Marks (B1)

Sediment Deposits (B2)

Drift Deposits (B3)

Algal Mat or Crust (B4)

Iron Deposits (B5)

Surface Soil Cracks (B6)

Inundation Visible on Aerial Imagery (B7)

Sparsely Vegetated Concave Surface (B8)

Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

Salt Crust (B11)

Aquatic Invertebrates (B13)

Hydrogen Sulfide Odor (C1)

Oxidized Rhizospheres along Living Roots (C3)

Presence of Reduced Iron (C4)

Recent Iron Reduction in Tilled Soils (C6)

Stunted or Stressed Plants (D1) (LRR A)

Other (Explain in Remarks)

Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

Drainage Patterns (B10)

Dry-Season Water Table (C2)

Saturation Visible on Aerial Imagery (C9)

Geomorphic Position (D2)

Shallow Aquitard (D3)

FAC-Neutral Test (D5)

Raised Ant Mounds (D6) (LRR A)

Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes

No

X

Water Table Present?

Yes

No

X

Saturation Present?

Yes

No

X

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present?

Yes

No

X

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

Remarks:

Artificially drained by french drain extending north/south approximately 10 feet to the east of W1-SP-2. Microtopgraphy appears to be past excavator tracks were observed near W1-SP-2 withing Wetland W1.

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.:554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: City Center Access City/County: Federal Way / King Sampling Date: 5/03/2021
 Applicant/Owner: KC Fire Protection Dist 39 State: WA Sampling Point: W1-SP-2.1
 Investigator(s): Josh Wozniak, Amanda Weiss Section, Township, Range: T21N R04E S10
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): None
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315678 Long: -122.288620 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 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 site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Tacoma NOAA weather station, precipitation was below the normal range for the three months prior to the site visit.

Remarks:

This sample point is located upslope of Wetland 1. It is in proximity to Scouler's willow and salmonberry.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
1. <u>Salix scouleriana</u>		<u>20%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>20%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Rubus armeniacus</u>		<u>20%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Rubus spectabilis</u>		<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>30%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Dicentra formosa</u>		<u>40%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Polystichum munitum</u>		<u>10%</u>	<u>No</u>	<u>FACU</u>	
3. <u>Carex bolanderi</u>		<u>3%</u>	<u>No</u>	<u>FAC</u>	
4. <u>Hypericum perforatum</u>		<u>1%</u>	<u>No</u>	<u>FACU</u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>54%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 7/24/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W2-SP-3
 Investigator(s): Per Johnson, Matt Murphy, Aaron Thom Section, Township, Range: T21N R04E S10
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 3-5%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315296 Long: -122.290276 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:

W1-SP-3 is located north of S. 320th St., north of upland berm with evidence of ponding up to 6-inches above surface.

VEGETATION

Tree Stratum	(Plot size: 3m semi-circle)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
1. <u>Malus fusca</u>		100%	Yes	FACW	
2. <u> </u>					Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
3. <u> </u>					
4. <u> </u>					Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u> </u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> <u>5</u> - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
5. <u> </u>					
Sapling/Shrub Stratum (Plot size: 2m semi-circle)					Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>Rubus leucodermis</u>		20%	Yes	FACU	
2. <u>Spiraea douglasii</u>		15%	Yes	FACW	
3. <u>Rubus armeniacus</u>		5%	No	FAC	
4. <u>Rubus laciniatus</u>		5%	No	FACU	
5. <u> </u>					
Herb Stratum (Plot size: r=1m)					
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
Woody Vine Stratum (Plot size: 2m semi-circle)					
1. <u>none</u>					
2. <u> </u>					
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 7/24/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: **W2-SP-4**
 Investigator(s): Per Johnson, Matt Murphy, Aaron Thom Section, Township, Range: T21N R04E S10
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315216 Long: -122.290916 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:

W2-SP-4 is located approximately 500 feet west of Weyerhaeuser Way S and S 320th St, west of a ditch.

VEGETATION

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: <u>r=3m</u>)				Number of Dominant Species
1. <u>Populus balsamifera</u>	<u>65%</u>	<u>Yes</u>	<u>FAC</u>	That Are OBL, FACW, or FAC: <u>5</u> (A)
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
	<u>65%</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>r=2m</u>)				Percent of Dominant Species
1. <u>Cornus alba</u>	<u>60%</u>	<u>Yes</u>	<u>FACW</u>	That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. <u>Spiraea douglasii</u>	<u>20%</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Lonicera involucrata</u>	<u>15%</u>	<u>No</u>	<u>FAC</u>	Prevalence Index worksheet:
4. <u>Rosa nutkana</u>	<u>5%</u>	<u>No</u>	<u>FAC</u>	Total % Cover of: <u> </u> Multiply by: <u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	OBL species <u>0</u> x 1 = <u>0</u>
	<u>100%</u> = Total Cover			FACW species <u>80</u> x 2 = <u>160</u>
Herb Stratum (Plot size: <u>r=1m</u>)				FAC species <u>155</u> x 3 = <u>465</u>
1. <u>Agrostis capillaris</u>	<u>35%</u>	<u>Yes</u>	<u>FAC</u>	FACU species <u>0</u> x 4 = <u>0</u>
2. <u>Poa pratensis</u>	<u>35%</u>	<u>Yes</u>	<u>FAC</u>	UPL species <u>0</u> x 5 = <u>0</u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Column Totals: <u>235</u> (A) <u>625</u> (B)
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Prevalence Index = B/A = <u>2.66</u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Indicators:
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>1</u> - Rapid Test for Hydrophytic Vegetation
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u> <u>2</u> - Dominance Test is >50%
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> <u>3</u> - Prevalence Index is ≤3.0 ¹
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> <u>5</u> - Wetland Non-Vascular Plants ¹
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u> Problematic Hydrophytic Vegetation (Explain) ¹
	<u>70%</u> = Total Cover			¹ Indicators of hydric soil and wetland hydrology must be present.
Woody Vine Stratum (Plot size: <u>r=2m</u>)				
1. <u>none</u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
	<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>30%</u>				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>

Remarks:

Area appears to be planted given that the trees have collars around them.

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL

Sampling Point:W2-SP-4

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 ³	Remarks
0-2	10YR 3/2	100					CbGrL	
2-16	2.5Y 3/2	60	2.5Y 5/2	35	D	M	CbGrL	
			10YR 5/8	5	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (except MLRA 1)

☐ Loamy Gleyed Matrix (F2)

☒ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ 2 cm Muck (A10)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present?

Yes☒

No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☒ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☒ Surface Soil Cracks (B6)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Stunted or Stressed Plants (D1) (LRR A)

☐ Other (Explain in Remarks)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☐ Drainage Patterns (B10)

☐ Dry-Season Water Table (C2)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ FAC-Neutral Test (D5)

☐ Raised Ant Mounds (D6) (LRR A)

☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes☐

No☒

Water Table Present?

Yes☐

No☒

Saturation Present?

Yes☐

No☒

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present?

Yes☒

No☐

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

Remarks:

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Project No.:554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 7/24/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: **W2-SP-5**
 Investigator(s): Per Johnson, Matt Murphy, Aaron Thom Section, Township, Range: T21N R04E S10
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315205 Long: -122.290703 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:

W2-SP-5 is the paired upland pit to W2-SP-4. It is located east of W2-SP-4 on a hillslope.

VEGETATION

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60%</u> (A/B)
1. <u>Populus balsamifera</u>	<u>80%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u> </u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> <u>5</u> - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
80% = Total Cover				
Sapling/Shrub Stratum (Plot size: r=2m)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>Mahonia nervosa</u>	<u>20%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Oemleria cerasiformis</u>	<u>15%</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Rubus armeniacus</u>	<u>9%</u>	<u>Yes</u>	<u>FAC</u>	
4. <u>Populus balsamifera</u>	<u>1%</u>	<u>No</u>	<u>FAC</u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
45% = Total Cover				
Herb Stratum (Plot size: r=1m)				
1. <u>Poa pratensis</u>	<u>85%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Agrostis capillaris</u>	<u>15%</u>	<u>No</u>	<u>FAC</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
100% = Total Cover				
Woody Vine Stratum (Plot size: r=2m)				
1. <u>none</u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
0% = Total Cover				
% Bare Ground in Herb Stratum <u> </u>				

Remarks:

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 7/24/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W3-SP-6
 Investigator(s): Matt Murphy, Aaron Thom Section, Township, Range: T21N R04E S09
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315193 Long: -122.293503 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgC - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:

Wetland W3 is effectively a vegetated roadside ditch with no apparent outlet, north of S 320th Street and east of NB I-5 onramp. W3-SP-6 located within wetland unit. Due to proximity of buried power and communications utilities, disturbed soil conditions from the S 320th fill embankment, and abundant unsafe human debris (e.g., hyperdermic needles), a soils and hydrology conditions below grade were not explored.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: X 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Phalaris arundinacea</u>		100%	Yes	FACW	
2. <u>Juncus effusus</u>		40%	Yes	FACW	
3. <u>Agrostis capillaris</u>		30%	No	FAC	
4. <u>Lotus corniculatus</u>		15%	No	FAC	
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		185% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Assumed saturated for a minimum of 5% of growing season given no stormwater controls on S 320th Street allowing sheetflow and overland flow from uplands into the wetland with no observed outlet present.

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 7/24/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W3-SP-7
 Investigator(s): Matt Murphy, Aaron Thom Section, Township, Range: T21N R04E S09
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315208 Long: -122.292679 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>		

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was above the normal range for the three months prior to the site visit.

Remarks:

Paired upland sample plot for Wetland W3 located upslope and east of Wetland W3, upon fill prism for gravel driveway and adjacent to power pole. Due to proximity of buried power and communications utilities, disturbed soil conditions from the S 320th fill embankment, and abundant unsafe human debris (e.g., hyperdermic needles), a soils and hydrology conditions below grade were not explored.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Rubus armeniacus</u>		90%	Yes	FAC	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		90% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>Agrostis capillaris</u>		65%	Yes	FAC	
2. <u>Anthoxanthum odoratum</u>		20%	Yes	FACU	
3. <u>Poa pratensis</u>		10%	No	FAC	
4. <u>Hypericum perforatum</u>		5%	No	FACU	
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		100% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/13/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: **W5-SP-8**
 Investigator(s): Per Johnson Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): None
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.313820 Long: -122.296265 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Arents, Alderwood material - AmC - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Sample plot is within the mineral edge of a large previously identified wetland, the inner portion of which is a bog (see W5-SP-24). W5-SP-8 location is approximately 20 feet northeast of the outlet of a stormwater overflow pipe from Wetland W8 (a stormwater pond) which extends west below the I-5 NB off-ramp to the eastern toe of a fill slope, west of the Olympic Pipeline easement.

VEGETATION

Tree Stratum	(Plot size: 3m semi-circle)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>Alnus rubra</u>		90%	Yes	FAC	
2. <u>Fraxinus latifolia</u>		10%	No	FACW	
3. <u>Sorbus aucuparia</u>		2%	No	NOL	
4. <u> </u>					
		102% = Total Cover			
Sapling/Shrub Stratum	(Plot size: 3m semi-circle)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
Herb Stratum	(Plot size: 2m semi-circle)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		0% = Total Cover			
Woody Vine Stratum	(Plot size: 1m semi-circle)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>100%</u>					

Remarks:

SOIL							Sampling Point:	W5-SP-8
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 ³	Remarks
0-16	10Y 5/1	80	10YR 4/6	20	C	M	SiL	
<div><div>¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.</div><div>²Location: PL=Pore Lining, M=Matrix.</div><div>³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)</div></div>								
Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):						Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)		<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> 2 cm Muck (A10)				
<input type="checkbox"/> Histic Epipedon (A2)		<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Red Parent Material (TF2)				
<input type="checkbox"/> Black Histic (A3)		<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)				
<input type="checkbox"/> Hydrogen Sulfide (A4)		<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)		<input type="checkbox"/> Other (Explain in Remarks)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)		<input checked="" type="checkbox"/> Depleted Matrix (F3)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.				
<input type="checkbox"/> Thick Dark Surface (A12)		<input type="checkbox"/> Redox Dark Surface (F6)						
<input type="checkbox"/> Sandy Mucky Mineral (S1)		<input type="checkbox"/> Depleted Dark Surface (F7)						
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Redox Depressions (F8)						
Restrictive Layer (if present):						Hydric Soil		
Type: _____						Present?		
Depth (inches): _____						Yes <input checked="" type="checkbox"/> No _____		
Remarks:								
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of one required; check all that apply)						Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1)		<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA		<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2,				
<input checked="" type="checkbox"/> High Water Table (A2)		1, 2, 4A, and 4B)		4A, and 4B)				
<input checked="" type="checkbox"/> Saturation (A3)		<input type="checkbox"/> Salt Crust (B11)		<input type="checkbox"/> Drainage Patterns (B10)				
<input type="checkbox"/> Water Marks (B1)		<input type="checkbox"/> Aquatic Invertebrates (B13)		<input checked="" type="checkbox"/> Dry-Season Water Table (C2)				
<input type="checkbox"/> Sediment Deposits (B2)		<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)				
<input type="checkbox"/> Drift Deposits (B3)		<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)		<input checked="" type="checkbox"/> Geomorphic Position (D2)				
<input type="checkbox"/> Algal Mat or Crust (B4)		<input type="checkbox"/> Presence of Reduced Iron (C4)		<input type="checkbox"/> Shallow Aquitard (D3)				
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)				
<input type="checkbox"/> Surface Soil Cracks (B6)		<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)		<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)				
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> Frost-Heave Hummocks (D7)				
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)								
Field Observations:						Wetland		
Surface Water Present?		Yes _____	No <input checked="" type="checkbox"/>	Depth (inches): _____		Hydrology		
Water Table Present?		Yes <input checked="" type="checkbox"/>	No _____	Depth (inches): 2		Present?		
Saturation Present?		Yes <input checked="" type="checkbox"/>	No _____	Depth (inches): surface		Yes <input checked="" type="checkbox"/> No _____		
(includes capillary fringe)								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:								
Abundant animal foot prints in soft moist surface soils suggesting frequency and duration of saturation.								

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/13/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W5-SP-9
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3-5%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.313866 Long: -122.296394 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Arents, Alderwood material - AmC - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Sample plot is within the uplands adjacent to W5-SP-8.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60%</u> (A/B)
1. <u>Alnus rubra</u>		<u>70%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Thuja plicata</u>		<u>30%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>100%</u> = Total Cover			Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Rubus ursinus</u>		<u>50%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Rubus spectabilis</u>		<u>25%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Oemleria cerasiformis</u>		<u>15%</u>	<u>No</u>	<u>FACU</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>90%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Yes <u>X</u> No <u> </u> Present?
1. <u>Polystichum munitum</u>		<u>30%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Equisetum hyemale</u>		<u>2%</u>	<u>No</u>	<u>FACW</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>32%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				
1. <u>none</u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>20%</u>					

Remarks:

40% moss cover in herb strata

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 4/30/2019
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W5-SP-23
 Investigator(s): Per Johnson Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): None
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.312046 Long: -122.296600 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Arents, Alderwood material - AmC - Not Hydric NWI classification: PSS/EM1C
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Sample plot is located within Wetland 5, 15 feet east of delineated bog edge. Corresponds to DP-1 from 2019 bog delineation.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
1. <u>Alnus rubra</u>		90%	Yes	FAC	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		90% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Oemleria cerasiformis</u>		50%	Yes	FACU	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		50% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Glyceria striata</u>		40%	Yes	OBL	
2. <u>Urtica dioica</u>		5%	No	FAC	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		45% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Vegetation plots chosen to capture wetland versus upland hummocks.

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US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL

Sampling Point:W5-SP-23

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 ³	Remarks
+2-0								Organic debris
0-8	10YR 3/2	98	10YR 4/6	2	C	M	SiL	
8-14	10YR 3/2	80	2.5Y 6/2	15	D	M	SiL	
			10YR 4/6	5	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

Histosol (A1)

Histic Epipedon (A2)

Black Histic (A3)

Hydrogen Sulfide (A4)

Depleted Below Dark Surface (A11)

Thick Dark Surface (A12)

Sandy Mucky Mineral (S1)

Sandy Gleyed Matrix (S4)

Sandy Redox (S5)

Stripped Matrix (S6)

Loamy Mucky Mineral (F1) (except MLRA 1)

Loamy Gleyed Matrix (F2)

Depleted Matrix (F3)

X

Redox Dark Surface (F6)

Depleted Dark Surface (F7)

Redox Depressions (F8)

2 cm Muck (A10)

Red Parent Material (TF2)

Very Shallow Dark Surface (TF12)

Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: n/a

Depth (inches): n/a

Hydric Soil Present?

YesXNo

Remarks:
Clay layer at 24-inches

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

X

Surface Water (A1)

X

High Water Table (A2)

X

Saturation (A3)

Water Marks (B1)

Sediment Deposits (B2)

Drift Deposits (B3)

Algal Mat or Crust (B4)

Iron Deposits (B5)

Surface Soil Cracks (B6)

Inundation Visible on Aerial Imagery (B7)

Sparsely Vegetated Concave Surface (B8)

Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

Salt Crust (B11)

Aquatic Invertebrates (B13)

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)

Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

Drainage Patterns (B10)

Dry-Season Water Table (C2)

Saturation Visible on Aerial Imagery (C9)

Geomorphic Position (D2)

Shallow Aquitard (D3)

FAC-Neutral Test (D5)

Raised Ant Mounds (D6) (LRR A)

Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

YesXNo

Water Table Present?

YesXNo

Saturation Present?
(includes capillary fringe)

YesXNo

Depth (inches): 3

Depth (inches): 0

Depth (inches): 0

Wetland Hydrology Present?

YesXNo

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

Remarks:
Apparent "moat" between bog and rest of wetland.

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: _____ Sampling Date: 4/30/2019
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W5-SP-24
 Investigator(s): Jeff Meyer and Kaylee Moser Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 3-5%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.312042 Long: -122.296822 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Orcas Peat - Or - Hydric NWI classification: PSS/EM1C
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

W5-SP-24 is located inside a delineated bog within Wetland W5, approximately 10 feet west of the eastern edge of the bog. Corresponds to DP-2 from 2019 bog delineation.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1. <u>Tsuga heterophylla</u>		<u>100%</u>	<u>Yes</u>	<u>FACU</u>	
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
		<u>100%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>Sambucus racemosa</u>		<u>30%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Rubus spectabilis</u>		<u>15%</u>	<u>Yes</u>	<u>FAC</u>	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
5. _____		_____	_____	_____	
		<u>45%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ X 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>none</u>		_____	_____	_____	
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
5. _____		_____	_____	_____	
6. _____		_____	_____	_____	
7. _____		_____	_____	_____	
8. _____		_____	_____	_____	
9. _____		_____	_____	_____	
10. _____		_____	_____	_____	
11. _____		_____	_____	_____	
		<u>0%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>none</u>		_____	_____	_____	
2. _____		_____	_____	_____	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>10%</u>					

Remarks:

Tsuga heterophylla meets special characteristics; is a bog adapted species.

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL

Sampling Point:W5-SP-24

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 ³	Remarks
0-6	7.5YR 3/3	100					Organic debris	
6-12	7.5YR 2.5/2	100					sapric peat	
12-28+	7.5YR 3/4	100					hemic peat	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

☒Histosol (A1)

☐Histic Epipedon (A2)

☐Black Histic (A3)

☐Hydrogen Sulfide (A4)

☐Depleted Below Dark Surface (A11)

☐Thick Dark Surface (A12)

☐Sandy Mucky Mineral (S1)

☐Sandy Gleyed Matrix (S4)

☐Sandy Redox (S5)

☐Stripped Matrix (S6)

☐Loamy Mucky Mineral (F1) (except MLRA 1)

☐Loamy Gleyed Matrix (F2)

☐Depleted Matrix (F3)

☐Redox Dark Surface (F6)

☐Depleted Dark Surface (F7)

☐Redox Depressions (F8)

2 cm Muck (A10)

Red Parent Material (TF2)

Very Shallow Dark Surface (TF12)

Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: n/a

Depth (inches): n/a

Hydric Soil Present?

YesX

No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

☐Surface Water (A1)

☒High Water Table (A2)

☒Saturation (A3)

☐Water Marks (B1)

☐Sediment Deposits (B2)

☐Drift Deposits (B3)

☐Algal Mat or Crust (B4)

☐Iron Deposits (B5)

☐Surface Soil Cracks (B6)

☐Inundation Visible on Aerial Imagery (B7)

☐Sparsely Vegetated Concave Surface (B8)

☐Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

☐Salt Crust (B11)

☐Aquatic Invertebrates (B13)

☐Hydrogen Sulfide Odor (C1)

☐Oxidized Rhizospheres along Living Roots (C3)

☐Presence of Reduced Iron (C4)

☐Recent Iron Reduction in Tilled Soils (C6)

☐Stunted or Stressed Plants (D1) (LRR A)

☐Other (Explain in Remarks)

☐Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☐Drainage Patterns (B10)

☐Dry-Season Water Table (C2)

☐Saturation Visible on Aerial Imagery (C9)

☐Geomorphic Position (D2)

☐Shallow Aquitard (D3)

☐FAC-Neutral Test (D5)

☐Raised Ant Mounds (D6) (LRR A)

☐Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes

NoX

Depth (inches):

Water Table Present?

YesX

No

Depth (inches):

8

Saturation Present?

YesX

No

Depth (inches):

8

(includes capillary fringe)

Wetland Hydrology Present?

YesX

No

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

Remarks:

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Project No.:554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/18/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W6-SP-10
 Investigator(s): Matt Murphy, Aaron Thom Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): valley narrow Local relief (concave, convex, none): none Slope (%): 3-5%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.310406 Long: -122.302139 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Arents, Alderwood material - AmB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Sample plot located within Wetland W6, along right (west) bank of Stream 1 (East Fork Hylebos Creek) in Belmor Park. Located along narrow floodbench adjacent to channel with steep slopes.

VEGETATION

Tree Stratum	(Plot size: 3m x 1m)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>Thuja plicata</u>		<u>5%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>5%</u>	<u>= Total Cover</u>		
Sapling/Shrub Stratum	(Plot size: 2m x 1m)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Rubus armeniacus</u>		<u>20%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Rubus spectabilis</u>		<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>30%</u>	<u>= Total Cover</u>		
Herb Stratum	(Plot size: 1m x 1m)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Phalaris arundinacea</u>		<u>50%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Equisetum telmateia</u>		<u>15%</u>	<u>No</u>	<u>FACW</u>	
3. <u>Solanum dulcamara</u>		<u>15%</u>	<u>No</u>	<u>FAC</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>80%</u>	<u>= Total Cover</u>		
Woody Vine Stratum	(Plot size: r=2m)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u>	<u>= Total Cover</u>		
% Bare Ground in Herb Stratum <u>open water</u>					

Remarks:

SOIL

Sampling Point:W6-SP-10

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 ³	Remarks
0-5	10YR 2/1	100					SiL	
5-16+	10YR 2/2	95	10GY 4/1	5	D	M	SiL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (except MLRA 1)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☒ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ 2 cm Muck (A10)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present?

Yes☒

No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

☐ Surface Water (A1)

☒ High Water Table (A2)

☒ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Surface Soil Cracks (B6)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Stunted or Stressed Plants (D1) (LRR A)

☐ Other (Explain in Remarks)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☐ Drainage Patterns (B10)

☒ Dry-Season Water Table (C2)

☐ Saturation Visible on Aerial Imagery (C9)

☒ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☒ FAC-Neutral Test (D5)

☐ Raised Ant Mounds (D6) (LRR A)

☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes☐

No☒

Water Table Present?

Yes☒

No☐

Saturation Present?

Yes☒

No☐

Depth (inches):

6

Depth (inches):

0, surface

Wetland Hydrology Present?

Yes☒

No☐

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

Remarks:

A 4-inch black plastic and 8-inch concrete pipe drain into Wetland W6 and Stream 1 from east (golf course). Stream 1 adjacent to SP-10 has standing water present.

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Project No.:554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/18/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W6-SP-11
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): >10%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.310421 Long: -122.302277 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Arents, Alderwood material - AmB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Paired upland pit for Wetland W6

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
1. <u>Salix scouleriana</u>		<u>80%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Thuja plicata</u>		<u>30%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>110%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Rubus armeniacus</u>		<u>30%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Rubus ursinus</u>		<u>15%</u>	<u>Yes</u>	<u>FACU</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>45%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Equisetum telmateia</u>		<u>5%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>5%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>Ilex aquifolium</u>		<u>2%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>2%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>55%</u>					

Remarks:

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL

Sampling Point:W6-SP-11

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 ³	Remarks
0-8	10YR 4/3	100					CbL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (except MLRA 1)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ 2 cm Muck (A10)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³Indicators 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:
Soil pit dug to 8" only due to cobble presence and steep slope.

HYDROLOGY

Wetland Hydrology Indicators:

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

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Surface Soil Cracks (B6)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Stunted or Stressed Plants (D1) (LRR A)

☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☐ Drainage Patterns (B10)

☐ Dry-Season Water Table (C2)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ FAC-Neutral Test (D5)

☐ Raised Ant Mounds (D6) (LRR A)

☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes

No

X

Water Table Present?

Yes

No

X

Saturation Present?

Yes

No

X

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present?

Yes

No

X

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

Remarks:

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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/18/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: SP-12
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.305656 Long: -122.301895 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Upland sample plot located 20 feet east from soundwall and 75 feet from exit 142A sign. Snags present nearby within a facultative dominated vegetation community, suggesting potential changes to hydrology such as altered hydrology or establishment of wetland conditions. However, no indication of wetland conditions observed below grade. Sample plot not associated with a wetland.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)
1. <u>Populus balsamifera</u>		<u>70%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Salix scouleriana</u>		<u>30%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>100%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Rubus ursinus</u>		<u>15%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Rubus armeniacus</u>		<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Acer macrophyllum</u>		<u>2%</u>	<u>No</u>	<u>FACU</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>27%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Agrostis stolonifera</u>		<u>100%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>100%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Parametrix

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 Project No.: 554-2441-022

US Army Corps of Engineers
 Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL

Sampling Point:SP-12

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 ³	Remarks
0-4	10YR 4/2	100					GrL	with angular rocks

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (except MLRA 1)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ 2 cm Muck (A10)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³Indicators 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:
Soil is compacted gravel fill material with angular rock.

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Surface Soil Cracks (B6)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Stunted or Stressed Plants (D1) (LRR A)

☐ Other (Explain in Remarks)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☐ Drainage Patterns (B10)

☐ Dry-Season Water Table (C2)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ FAC-Neutral Test (D5)

☐ Raised Ant Mounds (D6) (LRR A)

☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes

No X

Water Table Present?

Yes

No X

Saturation Present?

Yes

No X

(includes capillary fringe)

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present?

Yes

No X

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

Remarks:

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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/18/2020 & 11/11/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: **W9-SP-13**
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): sloped depression Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.314583 Long: -122.296806 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Arents, Alderwood material - AmC - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the 8/18/2020 and 11/11/2020 site visits.

Remarks:

SP for Wetland 9 located within the looping northbound I-5 on-ramp, south of S 320th Street. This SP was observed on both 8/18/2020 and 11/11/2020.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Phalaris arundinacea</u>		100%	Yes	FACW	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		100% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u> </u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Vegetation conditions did not change between the 8/18/2020 and 11/11/2020 field visit.

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Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL

Sampling Point:W9-SP-13

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 ³	Remarks
0-4.5	10YR 4/1	100						
4.5-16+	10Y 5/0	80	10YR 4/6	20	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☒ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (except MLRA 1)

☒ Loamy Gleyed Matrix (F2)

☒ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ 2 cm Muck (A10)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present?

Yes☒

No☐

Remarks:
Soils were only observed on 11/11/2020.

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

☐ Surface Water (A1)

☒ High Water Table (A2)

☒ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Surface Soil Cracks (B6)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Stunted or Stressed Plants (D1) (LRR A)

☐ Other (Explain in Remarks)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☒ Drainage Patterns (B10)

☐ Dry-Season Water Table (C2)

☐ Saturation Visible on Aerial Imagery (C9)

☒ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ FAC-Neutral Test (D5)

☐ Raised Ant Mounds (D6) (LRR A)

☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes☐

No☒

Water Table Present?

Yes☒

No☐

Saturation Present?

Yes☒

No☐

Depth (inches):

N/A

Depth (inches):

8.5

Depth (inches):

0

Wetland Hydrology Present?

Yes☒

No☐

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

Remarks:
During the 8/18/2020 field visit, surface drainage inlets (e.g., rills) were observed upslope with drainage marks leading to Wetland W9 providing two secondary indicators of hydrology (drainage patterns [B10] and geomorphic position [D2]). During the 11/11/2020 field visit, surface drainage within these drainage marks was observed with shallow ponding occurring within the rills and ruts near the sample plot and within the wetland unit with observed surface water drainage extending the wetland unit downslope to a catchbasin. Observed soils within the wetland sample plot were saturated with a shallow water table observed at 8.5 inches bgs.

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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/18/2020 & 11/11/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W9-SP-14
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.314621 Long: -122.296700 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Arents, Alderwood material - AmC - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the 8/18/2020 and 11/11/2020 site visits.

Remarks:

Paired upland pit for W9 located just north and upslope of W9 within I-5 footprint. This sample plot was observed on both 8/18/2020 and 11/11/2020.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Holcus lanatus</u>		60%	Yes	FAC	
2. <u>Agrostis stolonifera</u>		40%	Yes	FAC	
3. <u>Hypochaeris radicata</u>		5%	No	FACU	
4. <u>Plantago lanceolata</u>		2%	No	FACU	
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		107% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u> </u>					

Remarks:

Vegetation conditions did not change between the 8/18/2020 and 11/11/2020 field visits.

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL

Sampling Point:W9-SP-14

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 ³	Remarks
0-4	10YR 3/2	100						
4-8	10YR 4/2	95	10YR 4/6	5	C	M	GrL	
8-16+	10YR 5/1	85	10YR 4/6	15	C	M	GrL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present?

Yes☒No☐

Remarks:
Soils were observed on 11/11/2020.

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?Yes☐No☒

Water Table Present?Yes☐No☒

Saturation Present? (includes capillary fringe)Yes☒No☐

Depth (inches):

Depth (inches):

Depth (inches): 7

Wetland Hydrology Present?

Yes☐No☒

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

Remarks:
On 11/11/2020, no surface water was observed present and the water table was deeper than 16-inches bgs. Soil was saturated at 7-inches. Given the time of year (mid-November) and the depth of saturation observed, it is believed that if soils become saturated to the surface during the year, it does not do so with sufficient duration. Given the slope and downstream catchbasin, soils outside of Wetland W9 unit are believed to drain too quickly to meet the duration requirement.

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Project No.:554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/19/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W10-SP-15
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S09
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): >10%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315601 Long: -122.296219 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgC - Not Hydric NWI classification: PSSCx
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Approximately 1 foot east of ponded area, along narrow band of seasonally to occasionally inundated Wetland 10.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>Alnus rubra</u>		<u>85%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>85%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Cornus alba</u>		<u>30%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Salix lasiandra</u>		<u>25%</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Rubus armeniacus</u>		<u>5%</u>	<u>No</u>	<u>FAC</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>60%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Carex obnupta</u>		<u>25%</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Phalaris arundinacea</u>		<u>20%</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Ranunculus repens</u>		<u>5%</u>	<u>No</u>	<u>FAC</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>50%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL

Sampling Point:W10-SP-15

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 ³	Remarks
0-8	10YR 3/2	100					GrSaL	
8-16	10YR 3/2	90	10YR 4/1	10	D	M	GrSaL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

Histosol (A1)

Histic Epipedon (A2)

Black Histic (A3)

Hydrogen Sulfide (A4)

Depleted Below Dark Surface (A11)

Thick Dark Surface (A12)

Sandy Mucky Mineral (S1)

Sandy Gleyed Matrix (S4)

Sandy Redox (S5)

Stripped Matrix (S6)

Loamy Mucky Mineral (F1) (except MLRA 1)

Loamy Gleyed Matrix (F2)

Depleted Matrix (F3)

X

Redox Dark Surface (F6)

Depleted Dark Surface (F7)

Redox Depressions (F8)

2 cm Muck (A10)

Red Parent Material (TF2)

Very Shallow Dark Surface (TF12)

Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present?

YesXNo

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

Surface Water (A1)

X

High Water Table (A2)

X

Saturation (A3)

Water Marks (B1)

Sediment Deposits (B2)

Drift Deposits (B3)

Algal Mat or Crust (B4)

Iron Deposits (B5)

Surface Soil Cracks (B6)

Inundation Visible on Aerial Imagery (B7)

Sparsely Vegetated Concave Surface (B8)

Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

Salt Crust (B11)

Aquatic Invertebrates (B13)

Hydrogen Sulfide Odor (C1)

Oxidized Rhizospheres along Living Roots (C3)

Presence of Reduced Iron (C4)

Recent Iron Reduction in Tilled Soils (C6)

Stunted or Stressed Plants (D1) (LRR A)

Other (Explain in Remarks)

Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

Drainage Patterns (B10)

Dry-Season Water Table (C2)

Saturation Visible on Aerial Imagery (C9)

Geomorphic Position (D2)

Shallow Aquitard (D3)

FAC-Neutral Test (D5)

Raised Ant Mounds (D6) (LRR A)

Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes

No

X

Water Table Present?

Yes

X

No

Saturation Present?

Yes

X

No

Depth (inches):

Depth (inches):

8

Depth (inches):

0

Wetland Hydrology Present?

Yes

X

No

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

Remarks:

Ponded water located about 1-foot from sample plot.

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/19/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: **W10-SP-16**
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S09
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): >10%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.315613 Long: -122.296112 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgC - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:
 According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:
 Located approximately 6 feet from W10-SP-15, upslope approximately 4 feet in elevation from ponded water.

VEGETATION

Tree Stratum	(Plot size: <u>3mx2m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
1. <u><i>Alnus rubra</i></u>		<u>90%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u><i>Salix scouleriana</i></u>		<u>10%</u>	<u>No</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>100%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u><i>Oemleria cerasiformis</i></u>		<u>50%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u><i>Rubus armeniacus</i></u>		<u>15%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>65%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u><i>Ranunculus repens</i></u>		<u>90%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>90%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u><i>none</i></u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>10%</u>					

Remarks:

SOIL

Sampling Point: W10-SP-16

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 ³	Remarks
0-6	10YR 4/2	100					GrSaL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (except MLRA 1)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ 2 cm Muck (A10)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: compacted with cobbles

Depth (inches): 6

Hydric Soil Present?

Yes

No X

Remarks:

Unable to dig beyond 6 inches because of cobbles and roots intermixed within compacted layer. Soil was dry and friable at time of site visit.

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Surface Soil Cracks (B6)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Stunted or Stressed Plants (D1) (LRR A)

☐ Other (Explain in Remarks)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☐ Drainage Patterns (B10)

☐ Dry-Season Water Table (C2)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ FAC-Neutral Test (D5)

☐ Raised Ant Mounds (D6) (LRR A)

☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes

No X

Water Table Present?

Yes

No X

Saturation Present?

Yes

No X

(includes capillary fringe)

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present?

Yes

No X

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

Remarks:

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ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site:	Federal Way City Center Access	City/County:	Federal Way/King	Sampling Date:	8/19/2020
Applicant/Owner:	City of Federal Way	State:	Washington	Sampling Point:	W11-SP-17
Investigator(s):	Per Johnson, Aaron Thom	Section, Township, Range:	T21N R04E S09		
Landform (hillslope, terrace, etc.):	depression	Local relief (concave, convex, none):	concave	Slope (%):	<3%
Subregion (LRR):	Northwest Forests and Coast (LRR A)	Lat:	47.317001	Long:	-122.295387
		Datum:	NAD 1983 (HARN)		
Soil Unit (Name-ID-Hydric Rating):	Water	-	W	-	Not Hydric
				NWI classification:	PEM1F
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 Vegetation		Soil		or Hydrology	
				naturally problematic?	
			(If needed, explain any answers in Remarks.)		

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

Hydrophytic Vegetation Present?	Yes <u> X </u>	No <u> </u>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <u> X </u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> X </u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Near WSDOT northern project boundary east of I-5 northbound on ramp.

VEGETATION

<u>Tree Stratum</u> (Plot size: r=3m)		Absolute <u>% Cover</u>	Dominant <u>Species?</u>	Indicator <u>Status</u>
1.	<u>Fraxinus latifolia</u>	90%	Yes	FACW
2.	<u>Alnus rubra</u>	10%	No	FAC
3.	<u>Populus balsamifera</u>	10%	No	FAC
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		110% = Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: r=2m)				
1.	<u>Spiraea douglasii</u>	15%	Yes	FACW
2.	<u>Rubus spectabilis</u>	10%	Yes	FAC
3.	<u>Fraxinus latifolia</u>	5%	No	FACW
4.	<u>Populus balsamifera</u>	5%	No	FAC
	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		35% = Total Cover		
<u>Herb Stratum</u> (Plot size: r=1m)				
1.	<u>Carex obnupta</u>	2%	No	OBL
2.	<u>Geum macrophyllum</u>	1%	No	FAC
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
6.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
7.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
8.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
9.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
10.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
11.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		3% = Total Cover		
<u>Woody Vine Stratum</u> (Plot size: r=2m)				
1.	<u>none</u>	<u> </u>	<u> </u>	<u> </u>
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		0% = Total Cover		
% Bare Ground in Herb Stratum		97%		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

 Total % Cover of: Multiply by:

OBL species x 1 =

FACW species x 2 =

FAC species x 3 =

FACU species x 4 =

UPL species x 5 =

Column Totals: (A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

_____ 1 - Rapid Test for Hydrophytic Vegetation

X _____ 2 - Dominance Test is >50%

_____ 3 - Prevalence Index is ≤3.0¹

_____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

_____ 5 - Wetland Non-Vascular Plants¹

_____ Problematic Hydrophytic Vegetation (Explain)¹

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Remarks:

Parametrix

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/19/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W11-SP-18
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S09
 Landform (hillslope, terrace, etc.): hillslop Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.316986 Long: -122.295593 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgC - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

W11 upland plot approximately 20ft west of W11-SP-17

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Fraxinus latifolia</u>		<u>80%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Alnus rubra</u>		<u>20%</u>	<u>No</u>	<u>FAC</u>	
3. <u>Acer macrophyllum</u>		<u>15%</u>	<u>No</u>	<u>FACU</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>115%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Lonicera involucrata</u>		<u>15%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Vaccinium ovalifolium</u>		<u>10%</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Rubus spectabilis</u>		<u>5%</u>	<u>No</u>	<u>FAC</u>	
4. <u>Spiraea douglasii</u>		<u>2%</u>	<u>No</u>	<u>FACW</u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>32%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>5</u> - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Rubus ursinus</u>		<u>60%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>60%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1. <u>none</u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>40%</u>					

Remarks:

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/19/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W12-SP-19
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): valley/depression Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.312946 Long: -122.299057 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Arents, Alderwood material - AmC - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Between I-5 southbound on-ramp and I-5 main travel lanes, SW of 320th intersection

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Juncus effusus</u>		65%	Yes	FACW	
2. <u>Phalaris arundinacea</u>		30%	Yes	FACW	
3. <u>Agrostis stolonifera</u>		10%	No	FAC	
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		105% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Parametrix

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL								Sampling Point:	W12-SP-19
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 ³	Remarks	
0-16+	10YR 4/1	90	10YR 4/6	10	C	M	L		
<div><div>¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.</div><div>²Location: PL=Pore Lining, M=Matrix.</div><div>³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)</div></div>									
Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):						Indicators for Problematic Hydric Soils ³ :			
<input type="checkbox"/> Histosol (A1)		<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> 2 cm Muck (A10)					
<input type="checkbox"/> Histic Epipedon (A2)		<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Red Parent Material (TF2)					
<input type="checkbox"/> Black Histic (A3)		<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)					
<input type="checkbox"/> Hydrogen Sulfide (A4)		<input type="checkbox"/> Loamy Gleyed Matrix (F2)		<input type="checkbox"/> Other (Explain in Remarks)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)		<input checked="" type="checkbox"/> Depleted Matrix (F3)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					
<input type="checkbox"/> Thick Dark Surface (A12)		<input type="checkbox"/> Redox Dark Surface (F6)							
<input type="checkbox"/> Sandy Mucky Mineral (S1)		<input type="checkbox"/> Depleted Dark Surface (F7)							
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Redox Depressions (F8)							
Restrictive Layer (if present):						Hydric Soil			
Type: _____						Present?			
Depth (inches): _____						Yes <input checked="" type="checkbox"/> No _____			
Remarks:									
HYDROLOGY									
Wetland Hydrology Indicators:									
Primary Indicators (minimum of one required; check all that apply)						Secondary Indicators (2 or more required)			
<input type="checkbox"/> Surface Water (A1)		<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA		<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2,					
<input type="checkbox"/> High Water Table (A2)		1, 2, 4A, and 4B)		4A, and 4B)					
<input type="checkbox"/> Saturation (A3)		<input type="checkbox"/> Salt Crust (B11)		<input type="checkbox"/> Drainage Patterns (B10)					
<input type="checkbox"/> Water Marks (B1)		<input type="checkbox"/> Aquatic Invertebrates (B13)		<input type="checkbox"/> Dry-Season Water Table (C2)					
<input type="checkbox"/> Sediment Deposits (B2)		<input type="checkbox"/> Hydrogen Sulfide Odor (C1)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)					
<input type="checkbox"/> Drift Deposits (B3)		<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)		<input checked="" type="checkbox"/> Geomorphic Position (D2)					
<input type="checkbox"/> Algal Mat or Crust (B4)		<input type="checkbox"/> Presence of Reduced Iron (C4)		<input type="checkbox"/> Shallow Aquitard (D3)					
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)					
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)		<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)		<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)					
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> Frost-Heave Hummocks (D7)					
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)									
Field Observations:						Wetland			
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____						Hydrology			
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____						Yes <input checked="" type="checkbox"/> No _____			
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____						Present?			
(includes capillary fringe)									
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									
Assumed inundated/saturated for at least 5% of growing season.									

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 8/19/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W12-SP-20
 Investigator(s): Per Johnson, Aaron Thom Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5-10%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.312950 Long: -122.298889 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Arents, Alderwood materia - AmC - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>		

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Wetland 12 upland sample plot.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Holcus lanatus</u>		45%	Yes	FAC	
2. <u>Agrostis stolonifera</u>		45%	Yes	FAC	
3. <u>Cirsium arvense</u>		5%	No	FAC	
4. <u>Phalaris arundinacea</u>		5%	No	FACW	
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		100% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.: 554-2441-022

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Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 9/2/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: **W13-SP-21**
 Investigator(s): Per Johnson Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.314716 Long: -122.290291 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>X</u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was lower the normal range for the three months prior to the site visit.

Remarks:

East edge of W13 south of 320th

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)
1. <u>Prunus emarginata</u>		<u>10%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>10%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Spiraea douglasii</u>		<u>25%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Salix scouleriana</u>		<u>25%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Cornus alba</u>		<u>15%</u>	<u>Yes</u>	<u>FACW</u>	
4. <u>Populus balsamifera</u>		<u>10%</u>	<u>No</u>	<u>FAC</u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>75%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Tolmiea menziesii</u>		<u>10%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Juncus effusus</u>		<u>3%</u>	<u>No</u>	<u>FACW</u>	
3. <u>Carex species</u>		<u>3%</u>	<u>No</u>	<u>FAC</u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>16%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

SOIL

Sampling Point:W13-SP-21

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 ³	Remarks
0-7	10YR 3/2	90	10YR 4/6	10	C	PI	SiL	
7+	10YR 4/2	80	2.5Y 5/3	10	D	M	SiL	redox appears stratified
			2.5Y 5/6	10	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

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

Indicators for Problematic Hydric Soils³:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☒ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Mucky Mineral (S1)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1) (except MLRA 1)

☐ Loamy Gleyed Matrix (F2)

☒ Depleted Matrix (F3)

☒ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

☐ 2 cm Muck (A10)

☐ Red Parent Material (TF2)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present?

Yes☒

No☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☒ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Surface Soil Cracks (B6)

☐ Inundation Visible on Aerial Imagery (B7)

☒ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)

☐ Salt Crust (B11)

☐ Aquatic Invertebrates (B13)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres along Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Stunted or Stressed Plants (D1) (LRR A)

☐ Other (Explain in Remarks)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)

☐ Drainage Patterns (B10)

☐ Dry-Season Water Table (C2)

☐ Saturation Visible on Aerial Imagery (C9)

☒ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ FAC-Neutral Test (D5)

☐ Raised Ant Mounds (D6) (LRR A)

☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?

Yes☐

No☒

Depth (inches):

Water Table Present?

Yes☐

No☒

Depth (inches):

Saturation Present?

Yes☐

No☒

Depth (inches):

(includes capillary fringe)

Wetland Hydrology Present?

Yes☒

No☐

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

Remarks:

Ground surface lacks abundant herbaceous layer with evidence of silt sediment deposit indicating seasonal and periodic flooding.

Parametrix

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Project No.:554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 9/2/2020
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: **W13-SP-22**
 Investigator(s): Per Johnson Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 5-10%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.314694 Long: -122.290169 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was lower the normal range for the three months prior to the site visit.

Remarks:

Approximately 5 ft east of W13 boundary on gradual slope.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Acer circinatum</u>		25%	Yes	FAC	
2. <u>Oemleria cerasiformis</u>		20%	Yes	FACU	
3. <u>Rubus spectabilis</u>		20%	Yes	FAC	
4. <u>Rubus armeniacus</u>		20%	Yes	FAC	
5. <u>Ilex aquifolium</u>		15%	No	FACU	
		100% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Polystichum munitum</u>		5%	Yes	FACU	
2. <u>Epilobium ciliatum</u>		5%	Yes	FACW	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		10% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

SOIL								Sampling Point:	W13-SP-22
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 ³	Remarks	
0-16	10YR 4/3						CbL		
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. ³ Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)									
Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):						Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/> Histosol (A1)		<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> 2 cm Muck (A10)					
<input type="checkbox"/> Histic Epipedon (A2)		<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Red Parent Material (TF2)					
<input type="checkbox"/> Black Histic (A3)		<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)					
<input type="checkbox"/> Hydrogen Sulfide (A4)		<input type="checkbox"/> Loamy Gleyed Matrix (F2)		<input type="checkbox"/> Other (Explain in Remarks)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)		<input type="checkbox"/> Depleted Matrix (F3)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					
<input type="checkbox"/> Thick Dark Surface (A12)		<input type="checkbox"/> Redox Dark Surface (F6)							
<input type="checkbox"/> Sandy Mucky Mineral (S1)		<input type="checkbox"/> Depleted Dark Surface (F7)							
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Redox Depressions (F8)							
Restrictive Layer (if present):						Hydric Soil Present?			
Type: <u>n/a</u>						Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Depth (inches): <u>n/a</u>									
Remarks:									
HYDROLOGY									
Wetland Hydrology Indicators:									
<u>Primary Indicators (minimum of one required; check all that apply)</u>						<u>Secondary Indicators (2 or more required)</u>			
<input type="checkbox"/> Surface Water (A1)		<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)		<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)					
<input type="checkbox"/> High Water Table (A2)		<input type="checkbox"/> Salt Crust (B11)		<input type="checkbox"/> Drainage Patterns (B10)					
<input type="checkbox"/> Saturation (A3)		<input type="checkbox"/> Aquatic Invertebrates (B13)		<input type="checkbox"/> Dry-Season Water Table (C2)					
<input type="checkbox"/> Water Marks (B1)		<input type="checkbox"/> Hydrogen Sulfide Odor (C1)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)					
<input type="checkbox"/> Sediment Deposits (B2)		<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)		<input type="checkbox"/> Geomorphic Position (D2)					
<input type="checkbox"/> Drift Deposits (B3)		<input type="checkbox"/> Presence of Reduced Iron (C4)		<input type="checkbox"/> Shallow Aquitard (D3)					
<input type="checkbox"/> Algal Mat or Crust (B4)		<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input type="checkbox"/> FAC-Neutral Test (D5)					
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)		<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)					
<input type="checkbox"/> Surface Soil Cracks (B6)		<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> Frost-Heave Hummocks (D7)					
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)									
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)									
Field Observations:						Wetland Hydrology Present?			
Surface Water Present?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Water Table Present?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>					
Saturation Present? (includes capillary fringe)		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <input type="text"/>					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/7/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W16-SP-1
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.310883 Long: -122.289017 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This is the upland paired soil plot o W16-SP1 located on a stream terrace above channelized section. W16 has been incorporated into the larger W19.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Alnus rubra</u>		<u>70%</u>	<u>Yes</u>	<u>FAC</u>	Number of Dominant Species
2. <u>Pseudotsuga menziesii</u>		<u>30%</u>	<u>Yes</u>	<u>FACU</u>	That Are OBL, FACW, or FAC: <u>2</u> (A)
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	Total Number of Dominant
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	Species Across All Strata: <u>4</u> (B)
<u>100%</u> = Total Cover					Percent of Dominant Species
That Are OBL, FACW, or FAC: <u>50%</u> (A/B)					Prevalence Index worksheet:
Total % Cover of: <u> </u> Multiply by: <u> </u>					OBL species <u> </u> x 1 = <u> </u>
FACW species <u> </u> x 2 = <u> </u>					FAC species <u> </u> x 3 = <u> </u>
FACU species <u> </u> x 4 = <u> </u>					UPL species <u> </u> x 5 = <u> </u>
Column Totals: <u> </u> (A)					<u> </u> (B)
<u>Prevalence Index = B/A =</u>					Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation					2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0 ¹					4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5 - Wetland Non-Vascular Plants ¹					Problematic Hydrophytic Vegetation (Explain) ¹
¹ Indicators of hydric soil and wetland hydrology must be present.					Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>

Remarks:

Parametrix

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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL							Sampling Point:	W16-SP-1
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 ³	Remarks
0-16	7.5YR 3/3	80					Cobbly Loam	mixed matrix
0-16	10YR 4/6	20					Cobbly Loam	mixed matrix
<div><div>¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.</div><div>²Location: PL=Pore Lining, M=Matrix.</div><div>³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)</div></div>								
Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):						Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			<div>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</div>		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):						Hydric Soil		
Type: <u>none</u>						Present?		
Depth (inches): <u>n/a</u>						Yes <u> </u> No <u> X </u>		
Remarks:								
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of one required; check all that apply)						Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1)			<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)			<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)		
<input type="checkbox"/> High Water Table (A2)			<input type="checkbox"/> Salt Crust (B11)			<input type="checkbox"/> Drainage Patterns (B10)		
<input type="checkbox"/> Saturation (A3)			<input type="checkbox"/> Aquatic Invertebrates (B13)			<input type="checkbox"/> Dry-Season Water Table (C2)		
<input type="checkbox"/> Water Marks (B1)			<input type="checkbox"/> Hydrogen Sulfide Odor (C1)			<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Sediment Deposits (B2)			<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)			<input type="checkbox"/> Geomorphic Position (D2)		
<input type="checkbox"/> Drift Deposits (B3)			<input type="checkbox"/> Presence of Reduced Iron (C4)			<input type="checkbox"/> Shallow Aquitard (D3)		
<input type="checkbox"/> Algal Mat or Crust (B4)			<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)			<input type="checkbox"/> FAC-Neutral Test (D5)		
<input type="checkbox"/> Iron Deposits (B5)			<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)			<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)		
<input type="checkbox"/> Surface Soil Cracks (B6)			<input type="checkbox"/> Other (Explain in Remarks)			<input type="checkbox"/> Frost-Heave Hummocks (D7)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)								
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)								
Field Observations:						Wetland		
Surface Water Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u>						Hydrology		
Water Table Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u>						Present?		
Saturation Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)						Yes <u> </u> No <u> X </u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:								

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/7/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W16-SP-2
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): stream channel Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.310913 Long: -122.289017 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

Sample plot is adjacent to channelized area at the tow of a slope that creates a confined channel. This is the paired sample plot to W16-SP1. W16 has been incorporated into the larger W19.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u>0</u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Rubus spectabilis</u>		70%	Yes	FAC	
2. <u>Rubus ursinus</u>		5%	No	FACU	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		75% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Polystichum munitum</u>		3%	No	FACU	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		3% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>10%</u>					

Remarks:

Parametrix

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/7/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W17-SP-1
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): stream terrace Local relief (concave, convex, none): none Slope (%): 5-10%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.309956 Long: -122.290634 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This soil pit is located on a stream terrace of stream S3 a short distance upslope of wetland W17.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>none</u>					Number of Dominant Species
2. <u> </u>					That Are OBL, FACW, or FAC: <u>1</u> (A)
3. <u> </u>					Total Number of Dominant
4. <u> </u>					Species Across All Strata: <u>3</u> (B)
		<u>0%</u> = Total Cover			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>r=2m</u>)					That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1. <u>Rubus spectabilis</u>		<u>35%</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet:
2. <u>Rubus ursinus</u>		<u>10%</u>	<u>Yes</u>	<u>FACU</u>	Total % Cover of: <u> </u> Multiply by: <u> </u>
3. <u> </u>					OBL species <u> </u> x 1 = <u> </u>
4. <u> </u>					FACW species <u> </u> x 2 = <u> </u>
5. <u> </u>					FAC species <u> </u> x 3 = <u> </u>
		<u>45%</u> = Total Cover			FACU species <u> </u> x 4 = <u> </u>
Herb Stratum (Plot size: <u>r=1m</u>)					UPL species <u> </u> x 5 = <u> </u>
1. <u>Polystichum munitum</u>		<u>20%</u>	<u>Yes</u>	<u>FACU</u>	Column Totals: <u> </u> (A) <u> </u> (B)
2. <u> </u>					Prevalence Index = B/A = <u> </u>
3. <u> </u>					Hydrophytic Vegetation Indicators:
4. <u> </u>					1 - Rapid Test for Hydrophytic Vegetation
5. <u> </u>					2 - Dominance Test is >50%
6. <u> </u>					3 - Prevalence Index is ≤3.0 ¹
7. <u> </u>					4 - Morphological Adaptations ¹ (Provide supporting
8. <u> </u>					data in Remarks or on a separate sheet)
9. <u> </u>					5 - Wetland Non-Vascular Plants ¹
10. <u> </u>					Problematic Hydrophytic Vegetation (Explain) ¹
11. <u> </u>					¹ Indicators of hydric soil and wetland hydrology must
		<u>20%</u> = Total Cover			be present.
Woody Vine Stratum (Plot size: <u>r=2m</u>)					Hydrophytic
1. <u>none</u>					Vegetation
2. <u> </u>					Yes <u> </u> No <u>X</u>
		<u>0%</u> = Total Cover			Present?
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL							Sampling Point:	W17-SP-1
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 ³	Remarks
0-7	10YR 3/2	100					GrL	
7-16	10YR 4/4	100					GrSaL	
<div><div>¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.</div><div>²Location: PL=Pore Lining, M=Matrix.</div><div>³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)</div></div>								
Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):						Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):						Hydric Soil		
Type: <u>none</u>						Present?		
Depth (inches): <u>n/a</u>						Yes <u> </u> No <u> X </u>		
Remarks:								
Alpha alpha dipyridyl test strips were applied to the top 12 inches of the soil profile, no reaction was observed.								
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of one required; check all that apply)						Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1)			<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA			<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2,		
<input checked="" type="checkbox"/> High Water Table (A2)			1, 2, 4A, and 4B)			4A, and 4B)		
<input checked="" type="checkbox"/> Saturation (A3)			<input type="checkbox"/> Salt Crust (B11)			<input type="checkbox"/> Drainage Patterns (B10)		
<input checked="" type="checkbox"/> Water Marks (B1)			<input type="checkbox"/> Aquatic Invertebrates (B13)			<input type="checkbox"/> Dry-Season Water Table (C2)		
<input checked="" type="checkbox"/> Sediment Deposits (B2)			<input type="checkbox"/> Hydrogen Sulfide Odor (C1)			<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Drift Deposits (B3)			<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)			<input checked="" type="checkbox"/> Geomorphic Position (D2)		
<input type="checkbox"/> Algal Mat or Crust (B4)			<input type="checkbox"/> Presence of Reduced Iron (C4)			<input type="checkbox"/> Shallow Aquitard (D3)		
<input type="checkbox"/> Iron Deposits (B5)			<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)			<input type="checkbox"/> FAC-Neutral Test (D5)		
<input type="checkbox"/> Surface Soil Cracks (B6)			<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)			<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			<input type="checkbox"/> Other (Explain in Remarks)			<input type="checkbox"/> Frost-Heave Hummocks (D7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)								
Field Observations:						Wetland		
Surface Water Present? Yes <u> </u> No <u> X </u>						Hydrology		
Water Table Present? Yes <u> X </u> No <u> </u>						Present?		
Saturation Present? Yes <u> X </u> No <u> </u>						Yes <u> X </u> No <u> </u>		
(includes capillary fringe)								
Depth (inches): <u> </u>								
Depth (inches): <u> 7 </u>								
Depth (inches): <u> 5 </u>								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:								

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/7/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W17-SP-2
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 5-10%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.309910 Long: -122.290619 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This sample plot is located on a steep slope above strea S3 and wetland W18. This is the paired sample plot to W17-SP3.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>45</u> x 4 = <u>180</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>60</u> (A) <u>225</u> (B) Prevalence Index = B/A = <u>3.75</u>
1. <u>Rubus ursinus</u>		20%	Yes	FACU	
2. <u>Rubus spectabilis</u>		15%	Yes	FAC	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		35% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Polystichum munitum</u>		20%	Yes	FACU	
2. <u>Geranium robertianum</u>		5%	Yes	FACU	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		25% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site:	Federal Way City Center Access	City/County:	Federal Way/King	Sampling Date:	1/7/2021
Applicant/Owner:	City of Federal Way	State:	Washington	Sampling Point:	W17-SP-3
Investigator(s):	Trey Parry, Aaron Thom	Section, Township, Range:	T21N R04E S15		
Landform (hillslope, terrace, etc.):	depression	Local relief (concave, convex, none):	concave	Slope (%):	<3%
Subregion (LRR):	Northwest Forests and Coast (LRR A)	Lat:	47.309860	Long:	-122.290634
		Datum:	NAD 1983 (HARN)		
Soil Unit (Name-ID-Hydric Rating):	Alderwood gravelly sandy loam	-	AgB	-	Not Hydric
				NWI classification:	None
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes		X	No	(If no, explain in Remarks)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed?	Are "Normal Circumstances" present?		Yes	X	No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic?	(If needed, explain any answers in Remarks.)				

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

Hydrophytic Vegetation Present?	Yes <u> X </u>	No <u> </u>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <u> X </u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> X </u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This SP is located within wetland W17 where stream S3 discharges to the closed wetland that has no direct outlet. This is the paired sample point to W17-SP3

VEGETATION

		Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u>	(Plot size: <u>r=3m</u>)	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of Dominant Species	
1.	<u>none</u>				That Are OBL, FACW, or FAC: <u>1</u> (A)	
2.					Total Number of Dominant	
3.					Species Across All Strata: <u>1</u> (B)	
4.					Percent of Dominant Species	
		<u>0%</u>	= Total Cover		That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
<u>Sapling/Shrub Stratum</u>	(Plot size: <u>r=2m</u>)				<u>Prevalence Index worksheet:</u>	
1.	<u>Rubus spectabilis</u>	<u>70%</u>	<u>Yes</u>	<u>FAC</u>	<u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> <u> </u>	
2.	<u>Sambucus racemosa</u>	<u>10%</u>	<u>No</u>	<u>FACU</u>	OBL species <u> </u> x 1 = <u> </u>	
3.					FACW species <u> </u> x 2 = <u> </u>	
4.					FAC species <u> </u> x 3 = <u> </u>	
5.					FACU species <u> </u> x 4 = <u> </u>	
		<u>80%</u>	= Total Cover		UPL species <u> </u> x 5 = <u> </u>	
<u>Herb Stratum</u>	(Plot size: <u>r=1m</u>)				Column Totals: <u> </u> (A) <u> </u> (B)	
1.	<u>none</u>				Prevalence Index = B/A = <u> </u>	
2.					<u>Hydrophytic Vegetation Indicators:</u>	
3.					<u>1</u> - Rapid Test for Hydrophytic Vegetation	
4.					<u>X</u> <u>2</u> - Dominance Test is >50%	
5.					<u>3</u> - Prevalence Index is ≤3.0 ¹	
6.					<u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
7.					<u>5</u> - Wetland Non-Vascular Plants ¹	
8.					<u> </u> Problematic Hydrophytic Vegetation (Explain) ¹	
9.					¹ Indicators of hydric soil and wetland hydrology must be present.	
10.					<u> </u>	
11.					<u> </u>	
		<u>0%</u>	= Total Cover		<u>Hydrophytic Vegetation Present?</u>	
<u>Woody Vine Stratum</u>	(Plot size: <u>r=2m</u>)				<u>Yes</u> <u>X</u> <u>No</u> <u> </u>	
1.	<u>none</u>					
2.						
		<u>0%</u>	= Total Cover			
<u>% Bare Ground in Herb Stratum</u>		<u> </u>				

Remarks:

Remarks:	
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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL							Sampling Point:	W17-SP-3
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 ³	Remarks
0-7	10YR 3/2	100					GrL	
7-16	2.5YR 4/2	80	10YR 4/6	20	C	M	GrSaL	
<div><div>¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.</div><div>²Location: PL=Pore Lining, M=Matrix.</div><div>³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)</div></div>								
Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):					Indicators for Problematic Hydric Soils ³ :			
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			<div>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</div>		
<input type="checkbox"/> Thick Dark Surface (A12)			<input checked="" type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):					Hydric Soil			
Type: _____					Present?			
Depth (inches): _____					Yes <input checked="" type="checkbox"/> No _____			
Remarks:								
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of one required; check all that apply)					Secondary Indicators (2 or more required)			
<input type="checkbox"/> Surface Water (A1)			<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA			<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2,		
<input checked="" type="checkbox"/> High Water Table (A2)			1, 2, 4A, and 4B)			4A, and 4B)		
<input checked="" type="checkbox"/> Saturation (A3)			<input type="checkbox"/> Salt Crust (B11)			<input type="checkbox"/> Drainage Patterns (B10)		
<input checked="" type="checkbox"/> Water Marks (B1)			<input type="checkbox"/> Aquatic Invertebrates (B13)			<input type="checkbox"/> Dry-Season Water Table (C2)		
<input checked="" type="checkbox"/> Sediment Deposits (B2)			<input type="checkbox"/> Hydrogen Sulfide Odor (C1)			<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Drift Deposits (B3)			<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)			<input type="checkbox"/> Geomorphic Position (D2)		
<input type="checkbox"/> Algal Mat or Crust (B4)			<input type="checkbox"/> Presence of Reduced Iron (C4)			<input type="checkbox"/> Shallow Aquitard (D3)		
<input type="checkbox"/> Iron Deposits (B5)			<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)			<input type="checkbox"/> FAC-Neutral Test (D5)		
<input type="checkbox"/> Surface Soil Cracks (B6)			<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)			<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			<input type="checkbox"/> Other (Explain in Remarks)			<input type="checkbox"/> Frost-Heave Hummocks (D7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)								
Field Observations:					Wetland			
Surface Water Present?	Yes	_____	No	<input checked="" type="checkbox"/>	Depth (inches):	_____	Hydrology	Yes
Water Table Present?	Yes	<input checked="" type="checkbox"/>	No	_____	Depth (inches):	1	Present?	Yes
Saturation Present?	Yes	<input checked="" type="checkbox"/>	No	_____	Depth (inches):	surface (0)		No
(includes capillary fringe)								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:								

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/7/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W18-SP-1
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.309986 Long: -122.289688 Datum: NAG 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This sample plot is located upslope and outside of wetland W18.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1. <u>Thuja plicata</u>		<u>50%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>50%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>Gaultheria shallon</u>		<u>25%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Rubus ursinus</u>		<u>5%</u>	<u>No</u>	<u>FACU</u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>30%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Polystichum munitum</u>		<u>30%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
11. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>30%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1. <u>none</u>		<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>		<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

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Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

Project/Site:	Federal Way City Center Access	City/County:	Federal Way/King	Sampling Date:	1/7/2021
Applicant/Owner:	City of Federal Way	State:	Washington	Sampling Point:	W18-SP-2
Investigator(s):	Trey Parry, Aaron Thom	Section, Township, Range:	T21N R04E S15		
Landform (hillslope, terrace, etc.):	Depression	Local relief (concave, convex, none):	concave	Slope (%):	<3%
Subregion (LRR):	Northwest Forests and Coast (LRR A)	Lat:	47.309940	Long:	-122.289696
		Datum:	NAD 1983 (HARN)		
Soil Unit (Name-ID-Hydric Rating):	Alderwood gravelly sandy loam	-	AgB	-	Not Hydric
		NWI classification:	None		
Are climatic / hydrologic conditions on the site typical for this time of year?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (If no, explain in Remarks)		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?			Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic?			(If needed, explain any answers in Remarks.)		

Hydrophytic Vegetation Present?	Yes <u> X </u>	No <u> </u>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <u> X </u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> X </u>	No <u> </u>	

	Yes <u> X </u>	No <u> </u>
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According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

This sample plot is located within wetland W18 and is the paired sample plot to W18-SP1. This wetland has a highly constricted outlet that discharges downslope during periods of heavy rain (1/7/21 observation).

Tree Stratum		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>none</u>			
2.				
3.				
4.				
		0% = Total Cover		
Sapling/Shrub Stratum		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Rubus spectabilis</u>	40%	Yes	FAC
2.		20%	Yes	FAC
3.				
4.				
5.				
		60% = Total Cover		
Herb Stratum		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>none</u>			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		0% = Total Cover		
Woody Vine Stratum		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>none</u>			
2.				
		0% = Total Cover		
% Bare Ground in Herb Stratum		40%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 5 - Wetland Non-Vascular Plants¹

 Problematic Hydrophytic Vegetation (Explain)¹

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No

Vegetation cover estimated from photo.

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/7/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W18-SP-3
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): none Slope (%): 3-5%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.309280 Long: -122.290070 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This sample plot is located in a gentle swale that connects two distinct wetlands upslope and downslope. It is within wetland 18 and is the paired sample plot to W18-SP4.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Thuja plicata</u>		100%	Yes	FAC	Number of Dominant Species
2. <u> </u>					That Are OBL, FACW, or FAC: <u>2</u> (A)
3. <u> </u>					Total Number of Dominant
4. <u> </u>					Species Across All Strata: <u>2</u> (B)
					Percent of Dominant Species
					That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
100% = Total Cover					Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: <u>r=2m</u>)					Total % Cover of: <u> </u> Multiply by: <u> </u>
1. <u>Thuja plicata</u>		70%	Yes	FAC	OBL species <u> </u> x 1 = <u> </u>
2. <u>Rubus spectabilis</u>		15%	No	FAC	FACW species <u> </u> x 2 = <u> </u>
3. <u> </u>					FAC species <u> </u> x 3 = <u> </u>
4. <u> </u>					FACU species <u> </u> x 4 = <u> </u>
5. <u> </u>					UPL species <u> </u> x 5 = <u> </u>
					Column Totals: <u> </u> (A) <u> </u> (B)
85% = Total Cover					Prevalence Index = B/A = <u> </u>
Herb Stratum (Plot size: <u>r=1m</u>)					Hydrophytic Vegetation Indicators:
1. <u>none</u>					1 - Rapid Test for Hydrophytic Vegetation
2. <u> </u>					X 2 - Dominance Test is >50%
3. <u> </u>					3 - Prevalence Index is ≤3.0 ¹
4. <u> </u>					4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. <u> </u>					5 - Wetland Non-Vascular Plants ¹
6. <u> </u>					Problematic Hydrophytic Vegetation (Explain) ¹
7. <u> </u>					¹ Indicators of hydric soil and wetland hydrology must be present.
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
0% = Total Cover					
Woody Vine Stratum (Plot size: <u>r=2m</u>)					
1. <u>none</u>					
2. <u> </u>					
0% = Total Cover					
% Bare Ground in Herb Stratum <u>30%</u>					Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>

Remarks:

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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/7/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W18-SP-4
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): >10%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.309300 Long: -122.290054 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This sample plot is located upslope of W18-SP3 and wetland W18 as a whole.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				
1. <u>Thuja plicata</u>		20%	Yes	FAC	
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		20% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				
1. <u>Gaultheria shallon</u>		10%	Yes	FACU	
2. <u> </u>					Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		10% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1. <u>none</u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/11/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W18-SP-5
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.309830 Long: -122.289200 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This sample plot is located near Lake Access Rd in a depression approximately 30ft west of road. Shallow rooted downed trees were observed near and in wetland. It is the paired wetland plot with W-18-SP6.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
1. <u>none</u>						
2. <u> </u>						
3. <u> </u>						
4. <u> </u>						
		<u>0%</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)					
1. <u>none</u>						
2. <u> </u>						
3. <u> </u>						
4. <u> </u>						
		<u>0%</u> = Total Cover				
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.	
1. <u>Poa pratensis</u>	<u>20%</u>	<u>Yes</u>	<u>FAC</u>			
2. <u>Juncus effusus</u>	<u>15%</u>	<u>Yes</u>	<u>FACW</u>			
3. <u>Ranunculus repens</u>	<u>2%</u>	<u>No</u>	<u>FAC</u>			
4. <u> </u>						
5. <u> </u>						
6. <u> </u>						
7. <u> </u>						
8. <u> </u>						
9. <u> </u>						
10. <u> </u>						
		<u>37%</u> = Total Cover				
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	
1. <u>none</u>						
2. <u> </u>						
		<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>20%</u>						

Remarks:

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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/11/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W18-SP-6
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): convex Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.309815 Long: -122.289230 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This sample plot is located upslope of of W18-SP6

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>none</u>		100%	Yes	FAC	Number of Dominant Species
2. <u> </u>					That Are OBL, FACW, or FAC: <u>1</u> (A)
3. <u> </u>					Total Number of Dominant
4. <u> </u>					Species Across All Strata: <u>2</u> (B)
		100% = Total Cover			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>r=2m</u>)					That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Gaultheria shallon</u>		97%	Yes	FACU	Prevalence Index worksheet:
2. <u>Rubus ursinus</u>		3%	No	FACU	Total % Cover of: <u> </u> Multiply by: <u> </u>
3. <u> </u>					OBL species <u> </u> x 1 = <u> </u>
4. <u> </u>					FACW species <u> </u> x 2 = <u> </u>
5. <u> </u>					FAC species <u> </u> x 3 = <u> </u>
		100% = Total Cover			FACU species <u> </u> x 4 = <u> </u>
Herb Stratum (Plot size: <u>r=1m</u>)					UPL species <u> </u> x 5 = <u> </u>
1. <u>none</u>					Column Totals: <u> </u> (A) <u> </u> (B)
2. <u> </u>					Prevalence Index = B/A = <u> </u>
3. <u> </u>					Hydrophytic Vegetation Indicators:
4. <u> </u>					1 - Rapid Test for Hydrophytic Vegetation
5. <u> </u>					2 - Dominance Test is >50%
6. <u> </u>					3 - Prevalence Index is ≤3.0 ¹
7. <u> </u>					4 - Morphological Adaptations ¹ (Provide supporting
8. <u> </u>					data in Remarks or on a separate sheet)
9. <u> </u>					5 - Wetland Non-Vascular Plants ¹
10. <u> </u>					Problematic Hydrophytic Vegetation (Explain) ¹
11. <u> </u>					¹ Indicators of hydric soil and wetland hydrology must
		0% = Total Cover			be present.
Woody Vine Stratum (Plot size: <u>r=2m</u>)					Hydrophytic
1. <u>none</u>					Vegetation
2. <u> </u>					Yes <u> </u> No <u>X</u>
		0% = Total Cover			Present?
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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Project No.: 554-2441-022

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/11/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: W19-SP-1
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.310047 Long: -122.288963 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u>X</u>	Is the Sampled Area within a Wetland	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This sample plot is located in a ponded area to the east of the fish access road. The vegetation here is problematic but the soils and hydrology are convincing. W19-SP1 is within Wetland 19 and is the paired sample plot to W19-SP2.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>none</u>					Number of Dominant Species
2. <u> </u>					That Are OBL, FACW, or FAC: <u>0</u> (A)
3. <u> </u>					Total Number of Dominant
4. <u> </u>					Species Across All Strata: <u>1</u> (B)
		<u>0%</u> = Total Cover			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: <u>r=2m</u>)					That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. <u>Gaultheria shallon</u>		<u>80%</u>	<u>Yes</u>	<u>FACU</u>	Prevalence Index worksheet:
2. <u> </u>					Total % Cover of: <u> </u> Multiply by: <u> </u>
3. <u> </u>					OBL species <u>0</u> x 1 = <u>0</u>
4. <u> </u>					FACW species <u>0</u> x 2 = <u>0</u>
5. <u> </u>					FAC species <u>0</u> x 3 = <u>0</u>
		<u>80%</u> = Total Cover			FACU species <u> </u> x 4 = <u> </u>
Herb Stratum (Plot size: <u>r=1m</u>)					UPL species <u>0</u> x 5 = <u>0</u>
1. <u>none</u>					Column Totals: <u> </u> (A) <u> </u> (B)
2. <u> </u>					Prevalence Index = B/A = <u> </u>
3. <u> </u>					Hydrophytic Vegetation Indicators:
4. <u> </u>					1 - Rapid Test for Hydrophytic Vegetation
5. <u> </u>					2 - Dominance Test is >50%
6. <u> </u>					3 - Prevalence Index is ≤3.0 ¹
7. <u> </u>					4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8. <u> </u>					5 - Wetland Non-Vascular Plants ¹
9. <u> </u>					X Problematic Hydrophytic Vegetation (Explain) ¹
10. <u> </u>					¹ Indicators of hydric soil and wetland hydrology must be present.
11. <u> </u>					
		<u>0%</u> = Total Cover			
Woody Vine Stratum (Plot size: <u>r=2m</u>)					
1. <u>none</u>					
2. <u> </u>					
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

This sample plot is located at an identical elevation to nearby *Spiraea douglasii*, *Juncus effusus*, *Salix* sp., and *Athyrium cyclosorum*. Despite the nearby vegetation this plot is only containen *Gaultheria shallon* due to large amounts of downed wood from logging practices.

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Project No.: 554-2441-022

US Army Corps of Engineers

Western Mountains, Valleys, and Coast Region (Version 2.0)

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Project No.: 554-2441-022

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

Project/Site: Federal Way City Center Access City/County: Federal Way/King Sampling Date: 1/11/2021
 Applicant/Owner: City of Federal Way State: Washington Sampling Point: **W19-SP-2**
 Investigator(s): Trey Parry, Aaron Thom Section, Township, Range: T21N R04E S15
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.310085 Long: -122.288979 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u>	No <u>X</u>	Is the Sampled Area within a Wetland Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma NOAA weather station, precipitation was within the normal range for the three months prior to the site visit.

Remarks:

This sample plot is upslope and north of W19-SP1.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1.	<u>none</u>	<u>90%</u>	<u>Yes</u>	<u>FACU</u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u>90%</u> = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1.	<u>Gaultheria shallon</u>	<u>90%</u>	<u>Yes</u>	<u>FACU</u>	
2.	<u>Rubus ursinus</u>	<u>2%</u>	<u>No</u>	<u>FACU</u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u>92%</u> = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1.	<u>none</u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
6.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
7.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
8.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
9.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
10.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
11.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1.	<u>none</u>	<u> </u>	<u> </u>	<u> </u>	
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u>0%</u> = Total Cover			
% Bare Ground in Herb Stratum <u>10%</u>					

Remarks:

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Project No.: 554-2441-022

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

Project/Site: City Center Access City/County: Federal Way / King Sampling Date: 5/03/2021
 Applicant/Owner: WSDOT State: WA Sampling Point: W20-SP-1
 Investigator(s): Josh Wozniak, Amanda Weiss Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.302948 Long: -122.301559 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 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 site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was below the normal range for the three months prior to the site visit.

Remarks:

This is the wetland sample point for Wetland 20. It occurs within a grassy slope alongside I5 N.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
		0% = Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>r=2m</u>)				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
1. <u>none</u>					
2. <u> </u>					
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		0% = Total Cover			
Herb Stratum	(Plot size: <u>r=1m</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.
1. <u>Holcus lanatus</u>		40%	Yes	FAC	
2. <u>Poa pratensis</u>		40%	Yes	FAC	
3. <u>Phalaris arundinacea</u>		10%	No	FACW	
4. <u> </u>					
5. <u> </u>					
6. <u> </u>					
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
		90% = Total Cover			
Woody Vine Stratum	(Plot size: <u>r=2m</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u> </u>					
2. <u> </u>					
		0% = Total Cover			
% Bare Ground in Herb Stratum		<u>10%</u>			

Remarks:

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SOIL							Sampling Point:	W20-SP-1
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 ³	Remarks
0-6	2.5Y 4/1	100					CoL	
6-10	2.5Y 5/2	80	10YR 4/6	5	C	M	GrL	
			10YR 6/6	15	C	M		
10-16	5Y 5/1	80	10YR 5/6	20	C	M	GrL	
<div><div>¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.</div><div>²Location: PL=Pore Lining, M=Matrix.</div><div>³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)</div></div>								
Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):						Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			<div>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</div>		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):						Hydric Soil		
Type: _____						Present?		
Depth (inches): _____						Yes <input checked="" type="checkbox"/> No _____		
Remarks:								
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of one required; check all that apply)						Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1)			<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA			<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2,		
<input checked="" type="checkbox"/> High Water Table (A2)			1, 2, 4A, and 4B)			4A, and 4B)		
<input checked="" type="checkbox"/> Saturation (A3)			<input type="checkbox"/> Salt Crust (B11)			<input type="checkbox"/> Drainage Patterns (B10)		
<input type="checkbox"/> Water Marks (B1)			<input type="checkbox"/> Aquatic Invertebrates (B13)			<input type="checkbox"/> Dry-Season Water Table (C2)		
<input type="checkbox"/> Sediment Deposits (B2)			<input type="checkbox"/> Hydrogen Sulfide Odor (C1)			<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Drift Deposits (B3)			<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)			<input type="checkbox"/> Geomorphic Position (D2)		
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)			<input type="checkbox"/> Presence of Reduced Iron (C4)			<input type="checkbox"/> Shallow Aquitard (D3)		
<input type="checkbox"/> Iron Deposits (B5)			<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)			<input type="checkbox"/> FAC-Neutral Test (D5)		
<input type="checkbox"/> Surface Soil Cracks (B6)			<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)			<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			<input type="checkbox"/> Other (Explain in Remarks)			<input type="checkbox"/> Frost-Heave Hummocks (D7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)								
Field Observations:						Wetland		
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>						Hydrology		
Water Table Present? Yes <input checked="" type="checkbox"/> No _____						Present?		
Saturation Present? Yes <input checked="" type="checkbox"/> No _____						Yes <input checked="" type="checkbox"/> No _____		
(includes capillary fringe)								
Depth (inches): _____								
Depth (inches): 9								
Depth (inches): 7								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:								
Oxidized rhizospheres start at 6 inches below surface.								

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

Project/Site: City Center Access City/County: Federal Way / King Sampling Date: 5/03/2021
 Applicant/Owner: WSDOT State: WA Sampling Point: W20-SP-2
 Investigator(s): Josh Wozniak, Amanda Weiss Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.302868 Long: -122.301422 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 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 site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <u> </u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was below the normal range for the three months prior to the site visit.

Remarks:

This sample point is located approximately 30 ft upslope and to the east of SP-1.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>r=3m</u>)					
1. <u>none</u>	<u> </u>	<u> </u>	<u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
<u>0%</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>	
Sapling/Shrub Stratum (Plot size: <u>r=2m</u>)					
1. <u>none</u>	<u> </u>	<u> </u>	<u> </u>		
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
<u>0%</u> = Total Cover					
Herb Stratum (Plot size: <u>r=1m</u>)					
1. <u>Poa pratensis</u>	<u>40%</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.	
2. <u>Holcus lanatus</u>	<u>20%</u>	<u>Yes</u>	<u>FAC</u>		
3. <u>Anthoxanthum odoratum</u>	<u>20%</u>	<u>Yes</u>	<u>FACU</u>		
4. <u>Schedonorus arundinaceus</u>	<u>20%</u>	<u>Yes</u>	<u>FAC</u>		
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
<u>100%</u> = Total Cover					
Woody Vine Stratum (Plot size: <u>r=2m</u>)					
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>		
<u>0%</u> = Total Cover					
% Bare Ground in Herb Stratum <u>0%</u>					

Remarks:

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

Project/Site: City Center Access City/County: Federal Way / King Sampling Date: 5/03/2021
 Applicant/Owner: WSDOT State: WA Sampling Point: W20-SP-3
 Investigator(s): Josh Wozniak, Amanda Weiss Section, Township, Range: T21N R04E S16
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): <3%
 Subregion (LRR): Northwest Forests and Coast (LRR A) Lat: 47.304916 Long: -122.300903 Datum: NAD 1983 (HARN)
 Soil Unit (Name-ID-Hydric Rating): Alderwood gravelly sandy loam - AgB - Not Hydric NWI classification: None
 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 site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	

Precipitation:

According to the Seattle Tacoma Airport NOAA weather station, precipitation was below the normal range for the three months prior to the site visit.

Remarks:

This sample point is located further upslope and east of SP-2.

VEGETATION

Tree Stratum	(Plot size: <u>r=3m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)	
1. <u>none</u>						
2. <u> </u>						
3. <u> </u>						
4. <u> </u>						
		<u>0%</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum		(Plot size: <u>r=2m</u>)				
1. <u>none</u>						
2. <u> </u>						
3. <u> </u>						
4. <u> </u>						
5. <u> </u>						
		<u>0%</u> = Total Cover				
Herb Stratum		(Plot size: <u>r=1m</u>)			Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation (Explain) ¹ ¹ Indicators of hydric soil and wetland hydrology must be present.	
1. <u>Anthoxanthum odoratum</u>	<u>47%</u>	<u>Yes</u>	<u>FACU</u>			
2. <u>Poa pratensis</u>	<u>47%</u>	<u>Yes</u>	<u>FAC</u>			
3. <u>Holcus lanatus</u>	<u>2%</u>	<u>No</u>	<u>FAC</u>			
4. <u> </u>						
5. <u> </u>						
6. <u> </u>						
7. <u> </u>						
8. <u> </u>						
9. <u> </u>						
10. <u> </u>						
11. <u> </u>						
		<u>96%</u> = Total Cover				
Woody Vine Stratum		(Plot size: <u>r=2m</u>)			Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	
1. <u> </u>						
2. <u> </u>						
		<u>0%</u> = Total Cover				
% Bare Ground in Herb Stratum		<u>0%</u>				

Remarks:

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Project No.: 554-2441-022

US Army Corps of Engineers
Western Mountains, Valleys, and Coast Region (Version 2.0)

SOIL							Sampling Point:	W20-SP-3
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 ³	Remarks
0-7	10YR 4/2	100					CoL	
7-15	2.5Y 5/1	80	10YR 5/6	10	C	M	GrL	
			7.5YR 5/8	10	C	M		
15+	2.5Y 5/1						GrL	
<div><div>¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.</div><div>²Location: PL=Pore Lining, M=Matrix.</div><div>³Texture: Sa = sand; Si = silt; C = clay; L = loam or loamy. Texture Modifier: co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)</div></div>								
Hydric Soil Indicators (Applicable to all LRRs, unless otherwise noted):						Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)		<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> 2 cm Muck (A10)				
<input type="checkbox"/> Histic Epipedon (A2)		<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Red Parent Material (TF2)				
<input type="checkbox"/> Black Histic (A3)		<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)				
<input type="checkbox"/> Hydrogen Sulfide (A4)		<input type="checkbox"/> Loamy Gleyed Matrix (F2)		<input type="checkbox"/> Other (Explain in Remarks)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)		<input checked="" type="checkbox"/> Depleted Matrix (F3)		<div>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</div>				
<input type="checkbox"/> Thick Dark Surface (A12)		<input type="checkbox"/> Redox Dark Surface (F6)						
<input type="checkbox"/> Sandy Mucky Mineral (S1)		<input type="checkbox"/> Depleted Dark Surface (F7)						
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Redox Depressions (F8)						
Restrictive Layer (if present):						Hydric Soil		
Type: _____						Present?		
Depth (inches): _____						Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of one required; check all that apply)				Secondary Indicators (2 or more required)				
<input type="checkbox"/> Surface Water (A1)		<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA		<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2,				
<input type="checkbox"/> High Water Table (A2)		1, 2, 4A, and 4B)		4A, and 4B)				
<input type="checkbox"/> Saturation (A3)		<input type="checkbox"/> Salt Crust (B11)		<input type="checkbox"/> Drainage Patterns (B10)				
<input type="checkbox"/> Water Marks (B1)		<input type="checkbox"/> Aquatic Invertebrates (B13)		<input type="checkbox"/> Dry-Season Water Table (C2)				
<input type="checkbox"/> Sediment Deposits (B2)		<input type="checkbox"/> Hydrogen Sulfide Odor (C1)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)				
<input type="checkbox"/> Drift Deposits (B3)		<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)		<input type="checkbox"/> Geomorphic Position (D2)				
<input type="checkbox"/> Algal Mat or Crust (B4)		<input type="checkbox"/> Presence of Reduced Iron (C4)		<input type="checkbox"/> Shallow Aquitard (D3)				
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input type="checkbox"/> FAC-Neutral Test (D5)				
<input type="checkbox"/> Surface Soil Cracks (B6)		<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)		<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)				
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> Frost-Heave Hummocks (D7)				
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)								
Field Observations:						Wetland		
Surface Water Present?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____		Hydrology		
Water Table Present?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____		Present?		
Saturation Present?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
(includes capillary fringe)								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:								

Appendix D

Wetland Rating Forms

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W1 Date of site visit: 8/18/2024Rated by Per Johnson, Aaron Thom Trained by Ecology? ☒ Yes ☐ No Date of training 2014, 2018HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☒ Yes ☐ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** IV (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

- Category I** - Total score = 23 - 27
- Category II** - Total score = 20 - 22
- Category III** - Total score = 16 - 19
- X **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	L	
Landscape Potential	L	L	L	
Value	M	H	M	
Score Based on Ratings	5	5	4	14

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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.

If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO - go to 2

☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO - Saltwater Tidal Fringe (Estuarine)**

☐ **YES - Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO - go to 3

☐ **YES** - The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
- ☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO - go to 4

☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
- ☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
- ☐ The water leaves the wetland **without being impounded**.

☒ NO - go to 5

☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
- ☐ The overbank flooding occurs at least once every 2 years.

☒ NO - go to 6

☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

A portion of the wetland is sloped and a portion is depressional, therefore a Depressional HGM class was used for this rating. W1 receives overland flow and seasonal groundwater. Its outlet is a French drain east of the wetland.

D2.2 and D5.2: pollution generating areas and excess runoff are downslope of the wetland.

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. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).		
Yes = 4 No = 0		0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		0
Area seasonally ponded is > 1/2 total area of wetland	points = 4	
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1		7

Rating of Site Potential If score is: ☐ 12 - 16 = H ☒ 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 = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		0
Source	Yes = 1 No = 0	
Total for D 2		0

Rating of Landscape Potential If score is: ☐ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3		1

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 2 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

- | | | |
|---|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 0 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

- | | | |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 3 |
| 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 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4

Add the points in the boxes above

5**Rating of Site Potential** If score is: ☐ 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 function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0

0

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?

Yes = 1 No = 0

0

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?

Yes = 1 No = 0

0

Total for D 5

Add the points in the boxes above

0**Rating of Landscape Potential** If score is: ☐ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): | | 2 |
| <input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | 0 |
| <input type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6

Add the points in the boxes above

2**Rating of Value** If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L*Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 1 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
- If the unit has a Forested class, check if:*
- ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|---|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 0 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft². *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

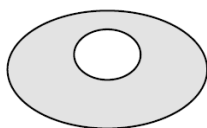
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

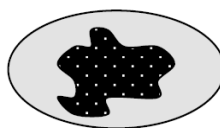
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



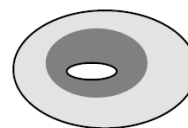
None = 0 points



Low = 1 point

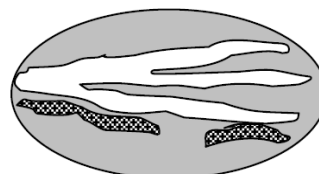
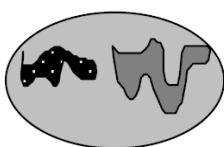


Moderate = 2 points



1

All three diagrams in this row are **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		2
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)		
Total for H 1		
Add the points in the boxes above		
5		

Rating of Site Potential If Score is: ☐ 15 - 18 = H ☐ 7 - 14 = M ☒ 0 - 6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 3% % undisturbed habitat + (_____ 2% % moderate & low intensity land uses / 2) = 0.04%		
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 19 % undisturbed habitat + (_____ 25 % moderate & low intensity land uses / 2) = 31.5%		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2		-1

Rating of Landscape Potential If Score is: ☐ 4 - 6 = H ☐ 1 - 3 = M ☒ < 1 = 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? Choose only the highest score that applies to the wetland being rated.		
Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan		1
Site has 1 or 2 priority habitats (listed on next page) within 100m points = 1		
Site does not meet any of the criteria above points = 0		

Rating of Value If Score is: ☐ 2 = H ☒ 1 = M ☐ 0 = L Record the rating on the first page

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

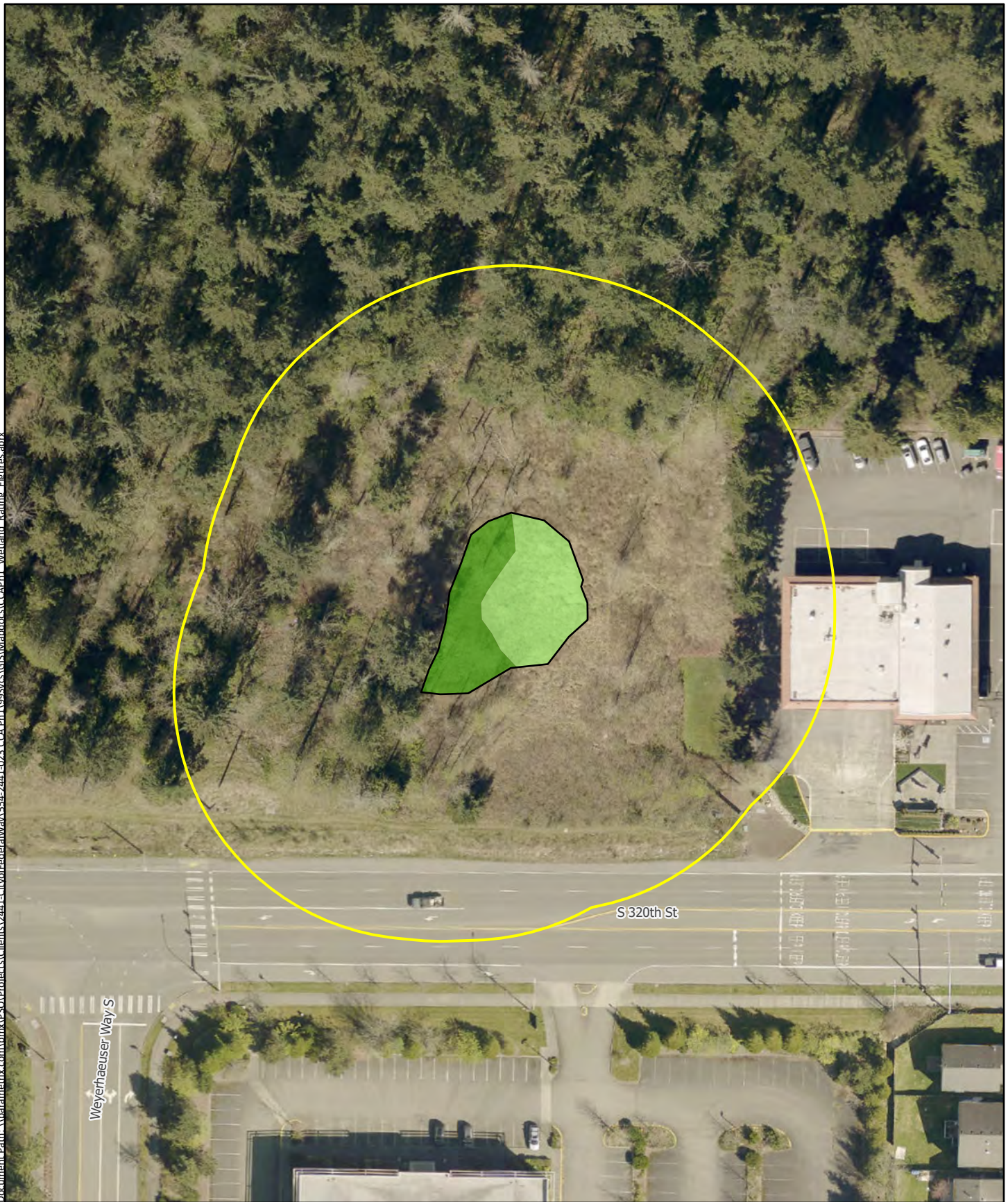
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. <input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <input type="checkbox"/> 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, less frequently, rocks <input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>) <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> <input type="checkbox"/> 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 on p. 100). <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²) <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103 <input type="checkbox"/> Grayland-Westport: Lands west of SR 105 <input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109 <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p style="text-align: right;"><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



- Wetland
(Approx. Boundary)
- 150-ft Buffer

Cowardin Class

- Palustrine Emergent (PEM)
- Palustrine Scrub Shrub (PSS)

Wetland W1

Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

0 50 100
Feet

Document Path: \\parametrix.com\pm\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\995vcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx







Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

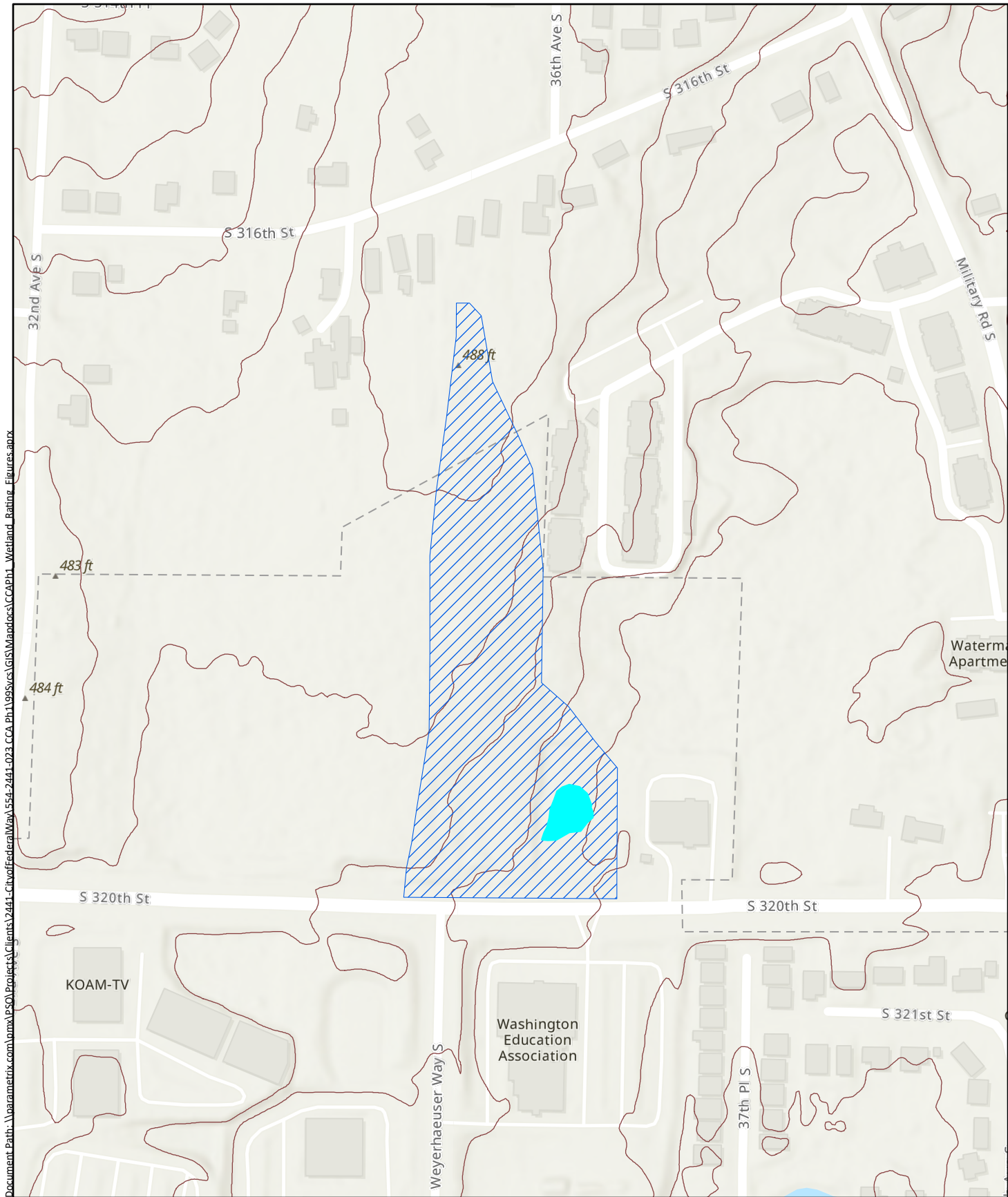
-  Wetland
(Approx. Boundary)
-  150-ft Buffer

-  Wetland Outlet
- Hydroperiod**
-  Saturated only

**Wetland W1
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Parametrix

Source: King County,
City of Federal Way, USGS



Wetland (Approx. Boundary)

Contributing Basin

Contours

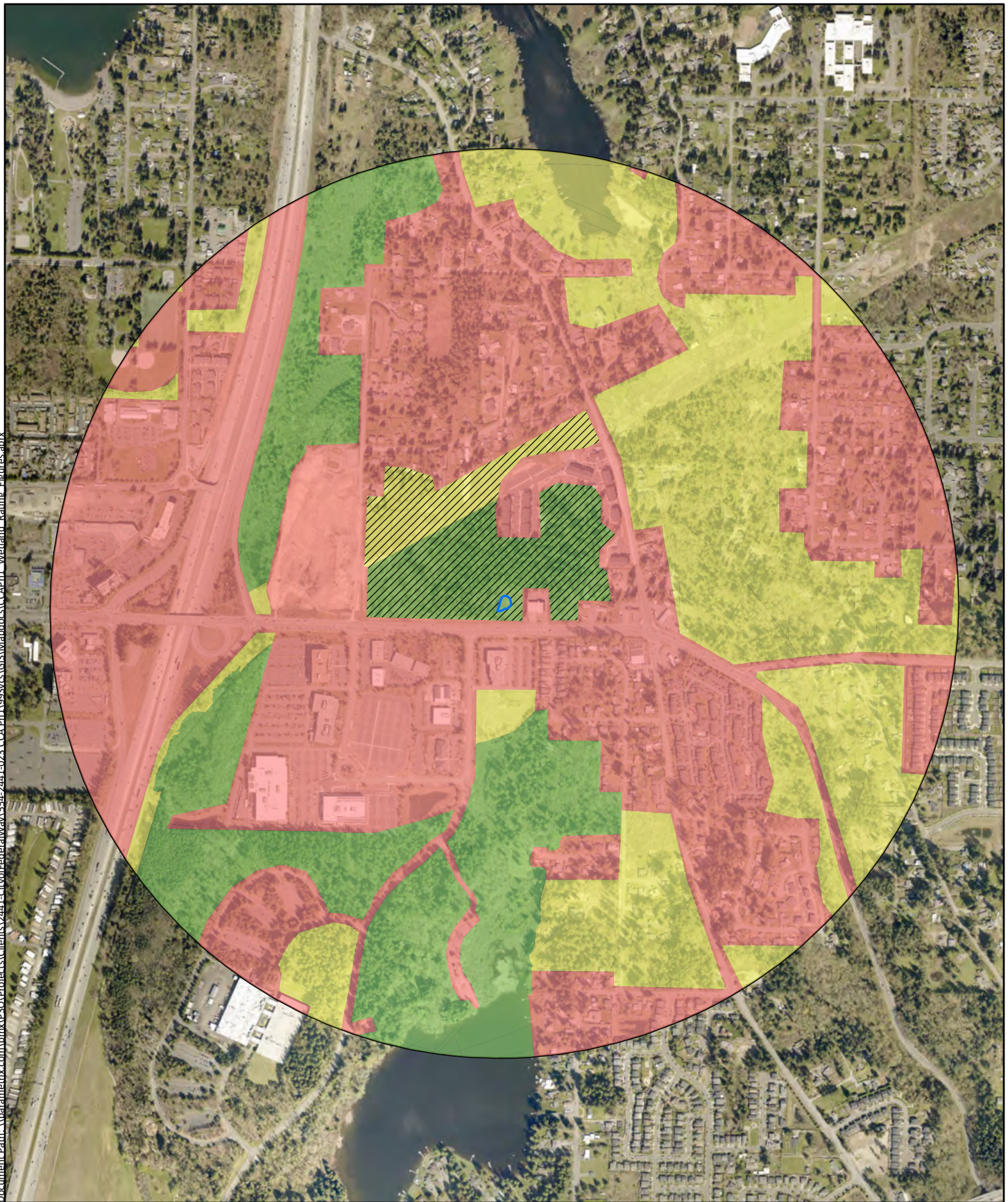
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Feet

**Wetland W1
Contributing Basin**

**Federal Way City Center Access Project
Wetland Rating Forms**

Federal Way, WA

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
Parametrix

Source: King County,
City of Federal Way






0 500 1,000
Feet

-  Wetland
(Approx. Boundary)
-  1-km Polygon

 Accessible Habitat

Land Use

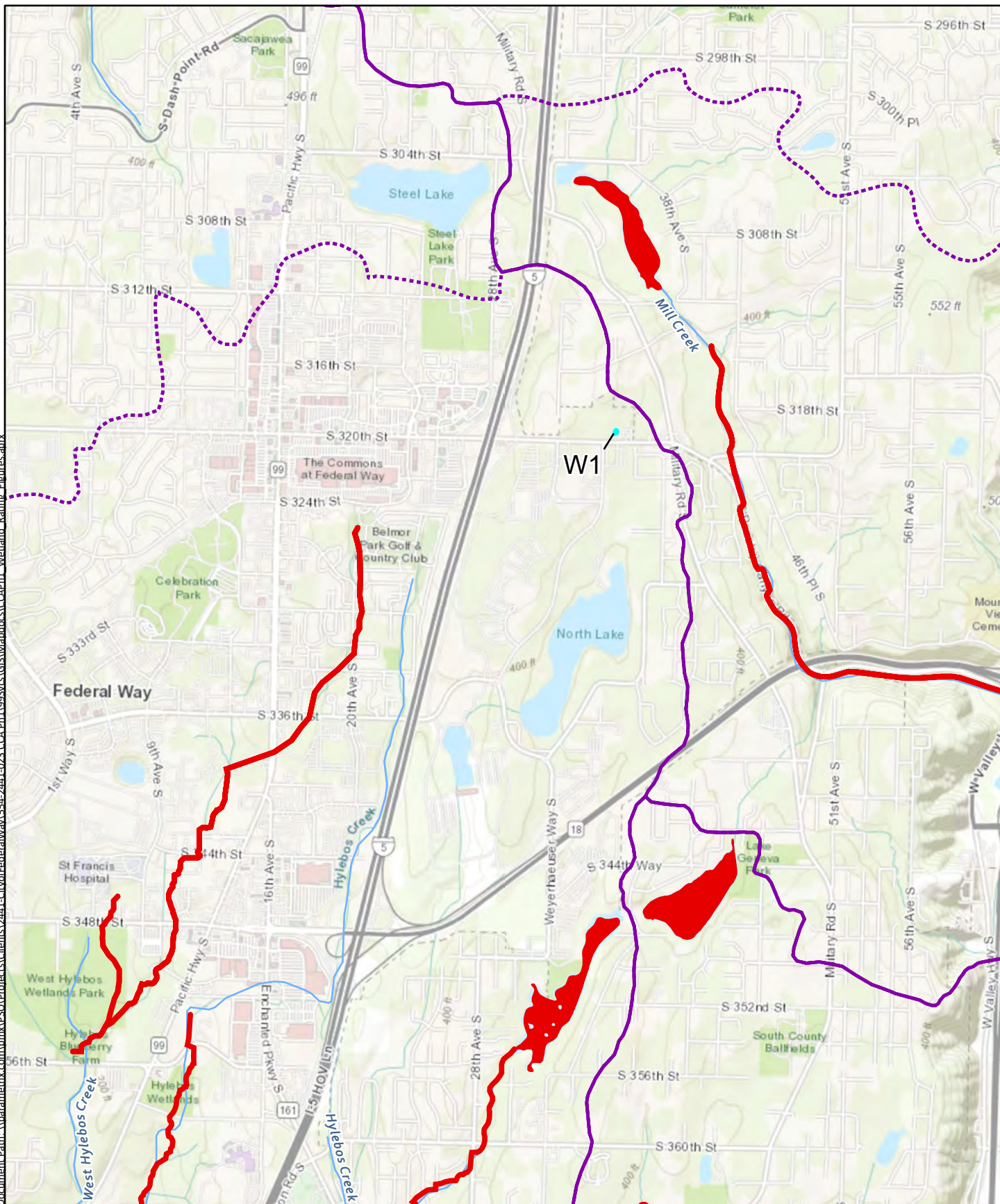
-  High
-  Low/moderate
-  Undisturbed

**Wetland W1
Land Use Intensity**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pm\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\srcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way, USGS



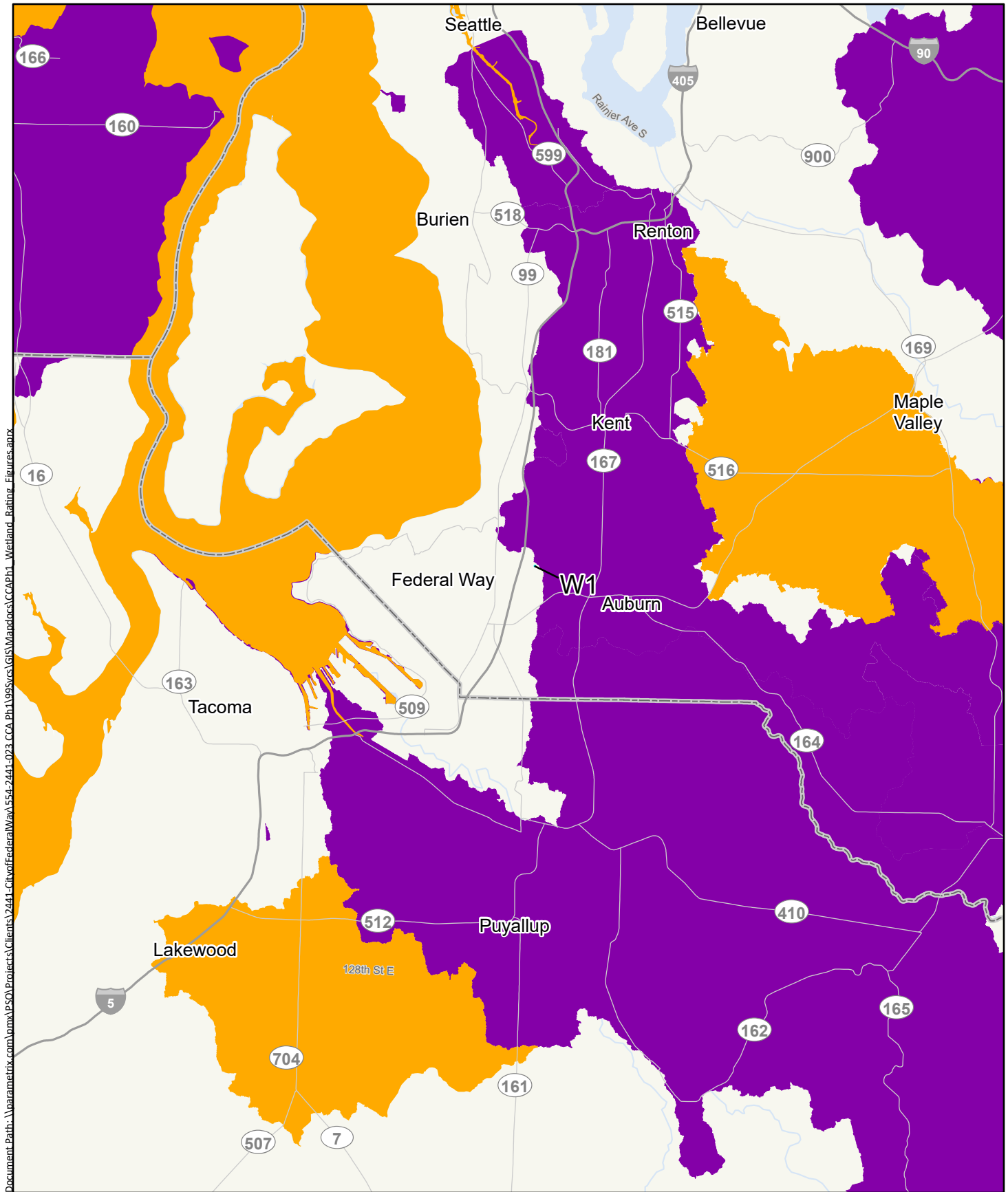
0 0.5 1
Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W1
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pm\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

Wetland W1

TMDLs (Total Maximum Daily Loads)

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W2 Date of site visit: 7/18/2020Rated by P. Johnson, A. Thom Trained by Ecology? ☒ Yes ☐ No Date of training 2014, 2018HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** III (based on functions ☒ 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	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	L	
Landscape Potential	H	H	L	
Value	M	H	M	
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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ NO - go to 2 ☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*
*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ NO - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).
☒ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.
☒ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.
☒ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

Wetland receives water from overland flow which infiltrates into soil. No outlet was observed.

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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	3
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0		0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	3
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	2
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1 Add the points in the boxes above		8

Rating of Site Potential If score is: ☐ 12 - 16 = H ☒ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		1
Source <u>Human waste, trash</u> Yes = 1 No = 0		
Total for D 2 Add the points in the boxes above		3

Rating of Landscape Potential If score is: ☒ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above		1

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 4 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- | | | |
|---|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 0 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- | | | |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 0 |
| 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 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4 Add the points in the boxes above **4****Rating of Site Potential** If score is: ☐ 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 function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 **1**D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 **1**D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 **1**Total for D 5 Add the points in the boxes above **3****Rating of Landscape Potential** If score is: ☒ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): | | 2 |
| <ul style="list-style-type: none"> Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> <ul style="list-style-type: none"> Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| <input type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0

Total for D 6 Add the points in the boxes above **2****Rating of Value** If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 1 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

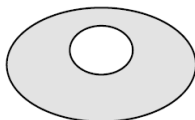
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



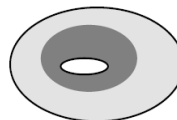
None = 0 points



Low = 1 point

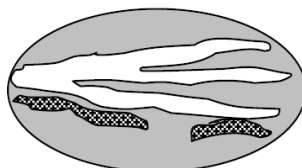
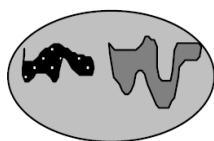


Moderate = 2 points



1

All three diagrams in this row are **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		1
<input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1		
Add the points in the boxes above		
5		
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input checked="" type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 3 % undisturbed habitat + (_____ 2 % moderate & low intensity land uses / 2) = 4%		
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 20 % undisturbed habitat + (_____ 21 % moderate & low intensity land uses / 2) = 30.5%		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2		-1
Add the points in the boxes above		
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose <i>only the highest score that applies to the wetland being rated</i>.		
Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		1
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input checked="" type="checkbox"/> 1 = M <input type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\Parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPH1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



- Wetland
(Approx. Boundary)
- 150-ft Buffer

Cowardin Class

- Palustrine Emergent (PEM)
- Palustrine Scrub Shrub (PSS)

Wetland W2

Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

0 50 100
Feet

Document Path: \\parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPH1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

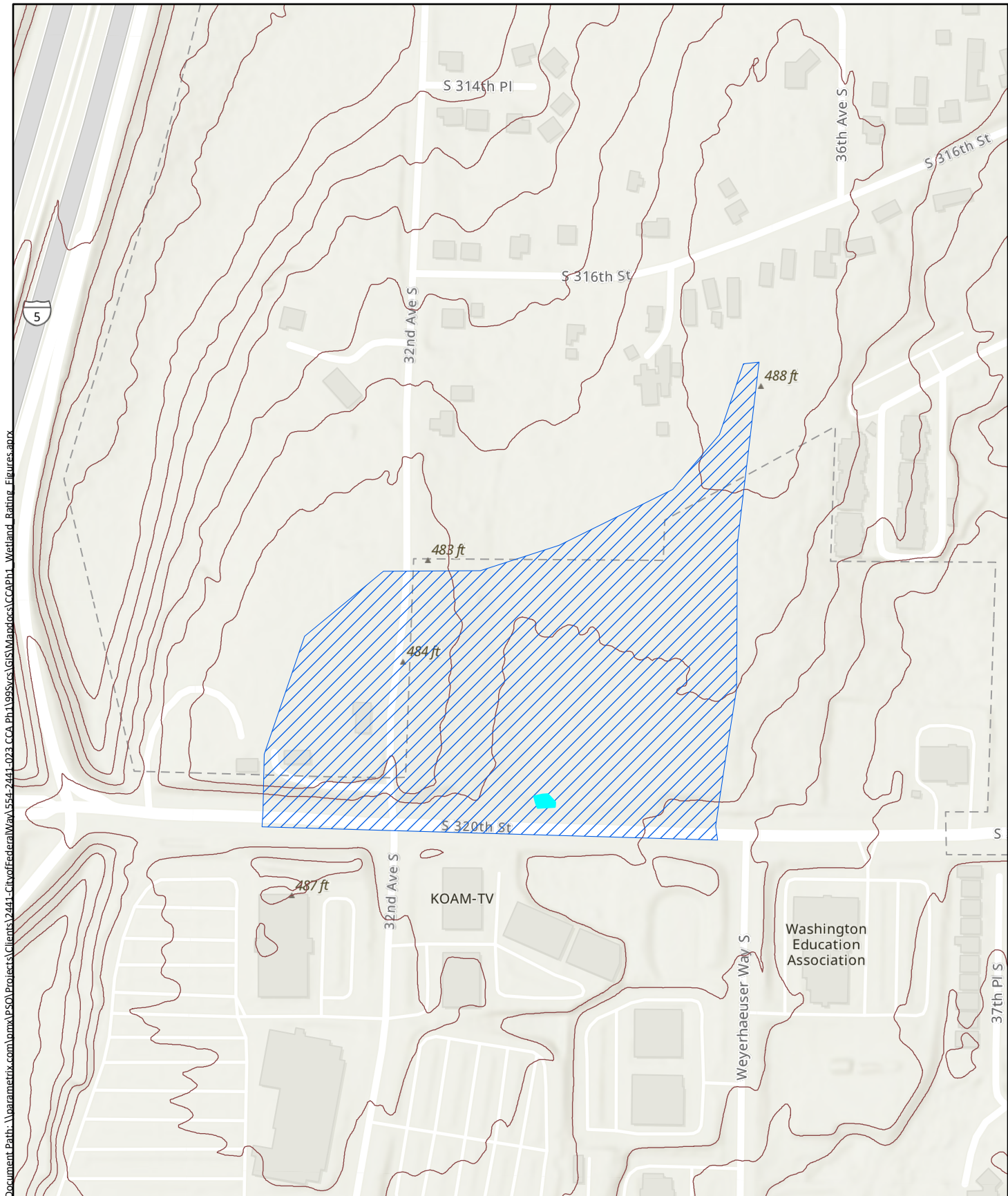
Wetland
(Approx. Boundary)
150-ft Buffer

Hydroperiod
Saturated only
Seasonally flooded

**Wetland W2
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph1\1995\GIS\Mapdocs\CCAPH1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way, USGS



■ Wetland (Approx. Boundary)

▨ Contributing Basin

— Contours

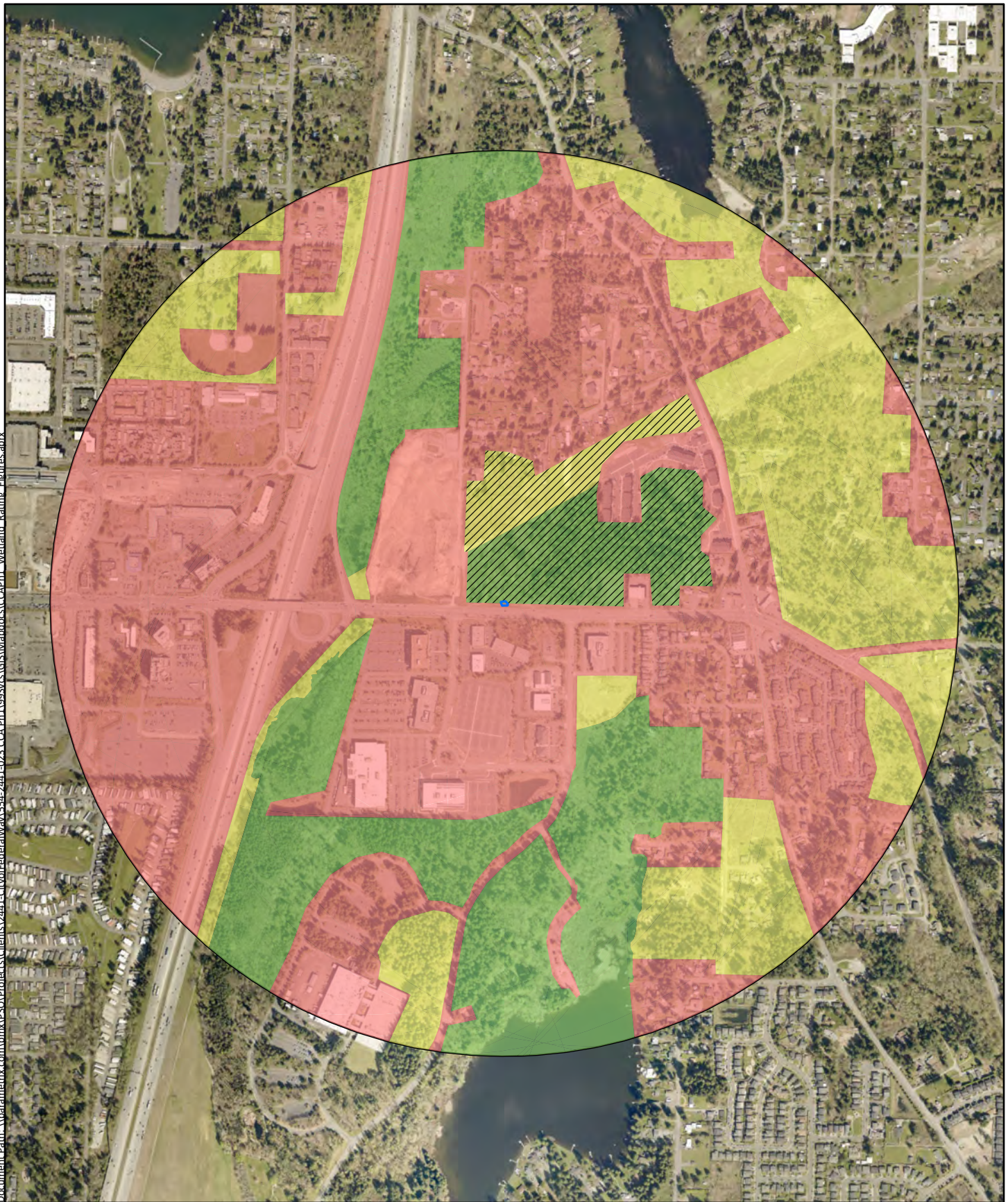
0 500 1,000
Feet

Wetland W2
Contributing Basin

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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
Parametrix

Source: King County,
City of Federal Way






0 500 1,000
Feet

-  Wetland
(Approx. Boundary)
-  1-km Polygon

 Accessible Habitat

Land Use

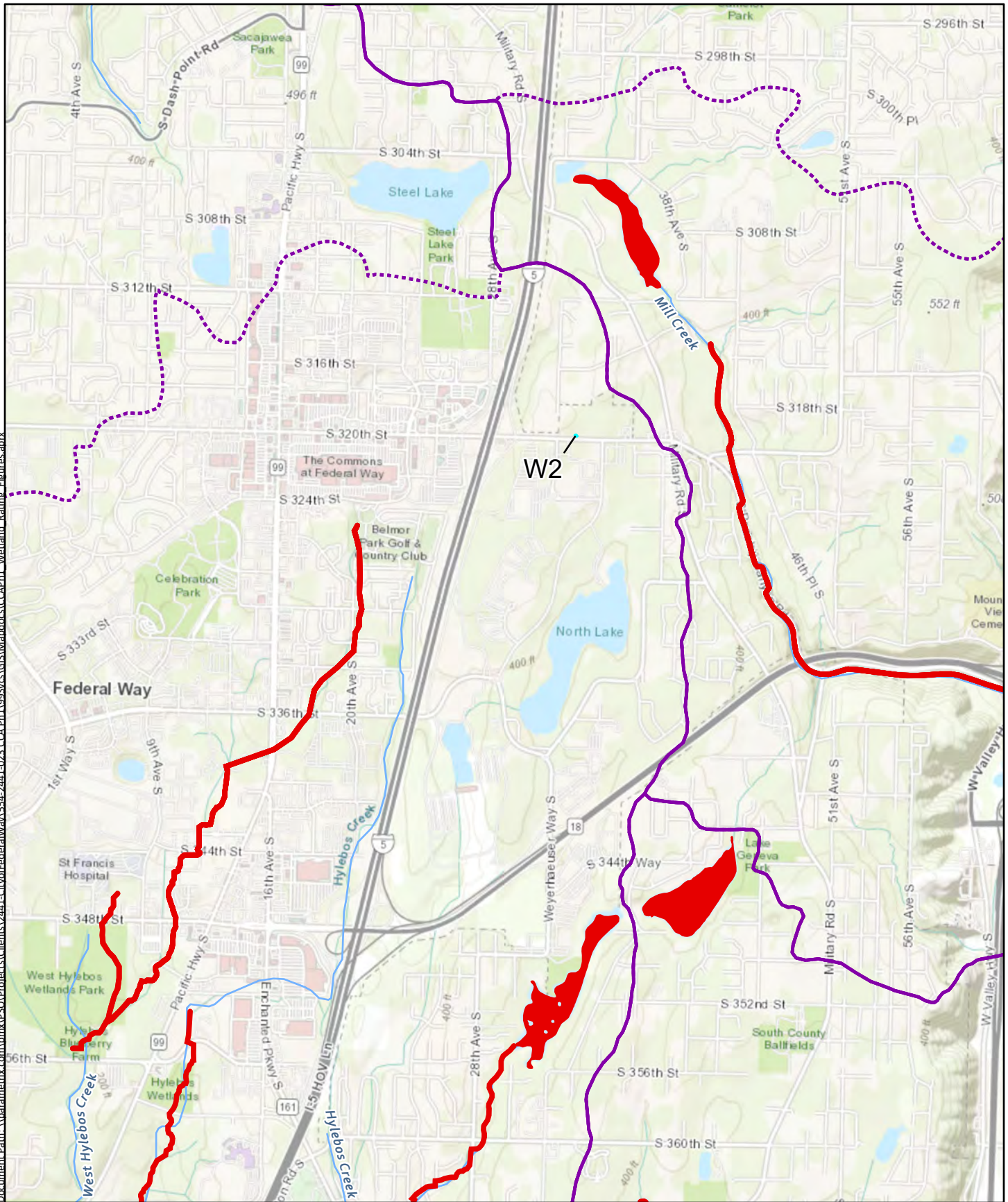
-  High
-  Low/moderate
-  Undisturbed

**Wetland W2
Land Use Intensity**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pm\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\srcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way, USGS



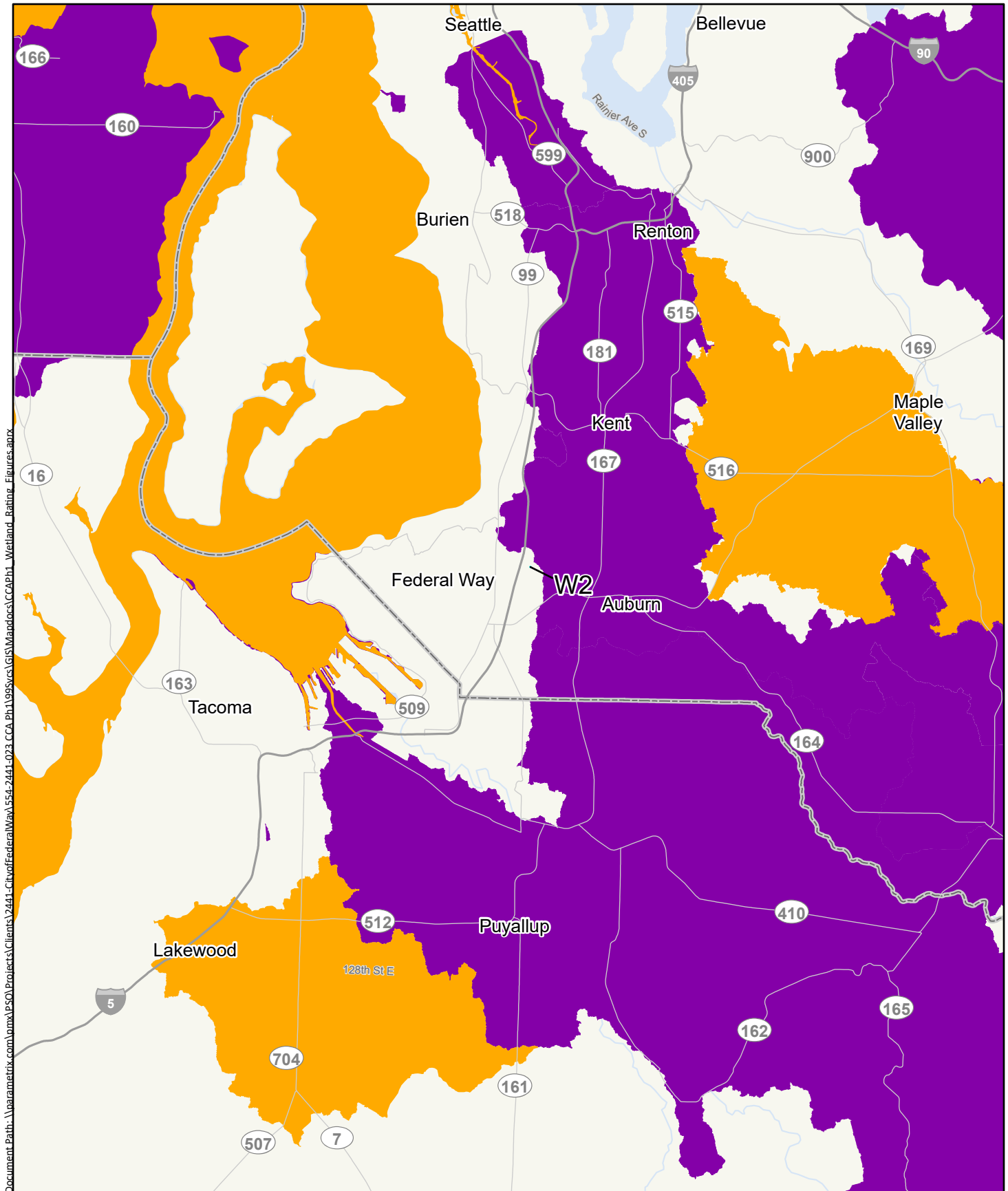
0 0.5 1 Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W2
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

Wetland
(Approx. Boundary)
County Boundary

WQ Improvement Projects
Approved
In Development

Wetland W2
TMDLs (Total Maximum Daily Loads)
Federal Way City Center Access Project
Wetland Rating Forms
Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W3 Date of site visit: 7/18/2020Rated by Per Johnson Trained by Ecology? ☒ Yes ☐ No Date of training Yr 2014HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

☐ **Category I** - Total score = 23 - 27
☐ **Category II** - Total score = 20 - 22
☒ **Category III** - Total score = 16 - 19
☐ **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	L	
Landscape Potential	H	H	L	
Value	M	H	L	Total
Score Based on Ratings	7	7	3	17

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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ NO - go to 2 ☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.
If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ NO - go to 3 ☐ YES - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).
☒ NO - go to 4 ☐ YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.
☒ NO - go to 5 ☐ YES - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.
☒ NO - go to 6 ☐ YES - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

Wetland receives water from overland flow which infiltrates into so. No outlet was observed.

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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	3
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0		0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	0
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1 Add the points in the boxes above		8

Rating of Site Potential If score is: ☐ 12 - 16 = H ☒ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		1
Source <u>Human waste, roadside debris</u>	Yes = 1 No = 0	
Total for D 2 Add the points in the boxes above		3

Rating of Landscape Potential If score is: ☒ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above		1

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 4 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- | | | |
|---|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 0 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- | | | |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 0 |
| 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 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4 Add the points in the boxes above **4****Rating of Site Potential** If score is: ☐ 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 function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 **1**D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 **1**D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 **1**Total for D 5 Add the points in the boxes above **3****Rating of Landscape Potential** If score is: ☒ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): | | 2 |
| <ul style="list-style-type: none"> Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> <ul style="list-style-type: none"> Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| <input type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0

Total for D 6 Add the points in the boxes above **2****Rating of Value** If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 0 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|-----------------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 0 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

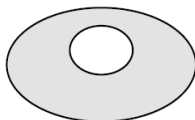
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 0 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



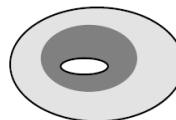
None = 0 points



Low = 1 point

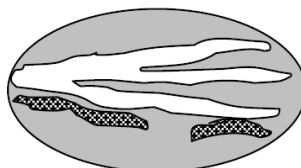
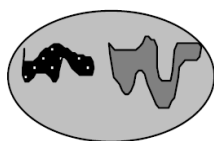


Moderate = 2 points



0

All three diagrams in this row are **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		0
<input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)		
<input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland		
<input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)		
<input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)		
<input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)		
<input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1		0
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input checked="" type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?			
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 5 % undisturbed habitat + (0 % moderate & low intensity land uses / 2) = 5%			0
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0			
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 20 % undisturbed habitat + (17 % moderate & low intensity land uses / 2) = 28.5%			
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0			
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0			
Total for H 2		-1	
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose <i>only the highest score that applies to the wetland being rated</i>.		
Site meets ANY of the following criteria: points = 2		0
<input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)		
<input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)		
<input type="checkbox"/> It is mapped as a location for an individual WDFW priority species		
<input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources		
<input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan		
Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1		
Site does not meet any of the criteria above points = 0		
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input type="checkbox"/> 1 = M <input checked="" type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

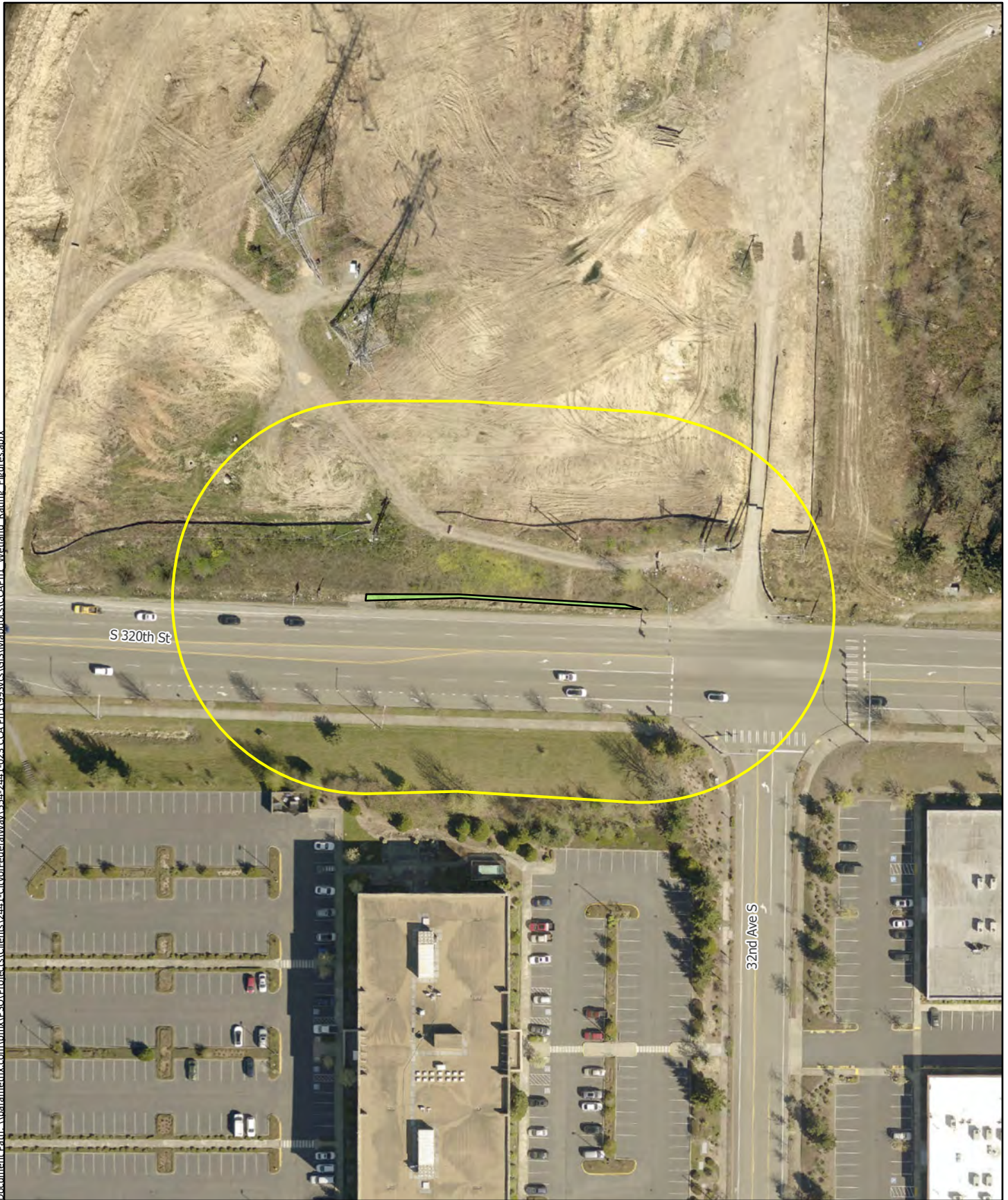
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\Parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph1\955vcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx





Parametrix


Source: King County,
City of Federal Way



0 50 100
Feet

-  Wetland
(Approx. Boundary)
-  150-ft Buffer

Cowardin Class

-  Palustrine Emergent (PEM)

Wetland W3

Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx






Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

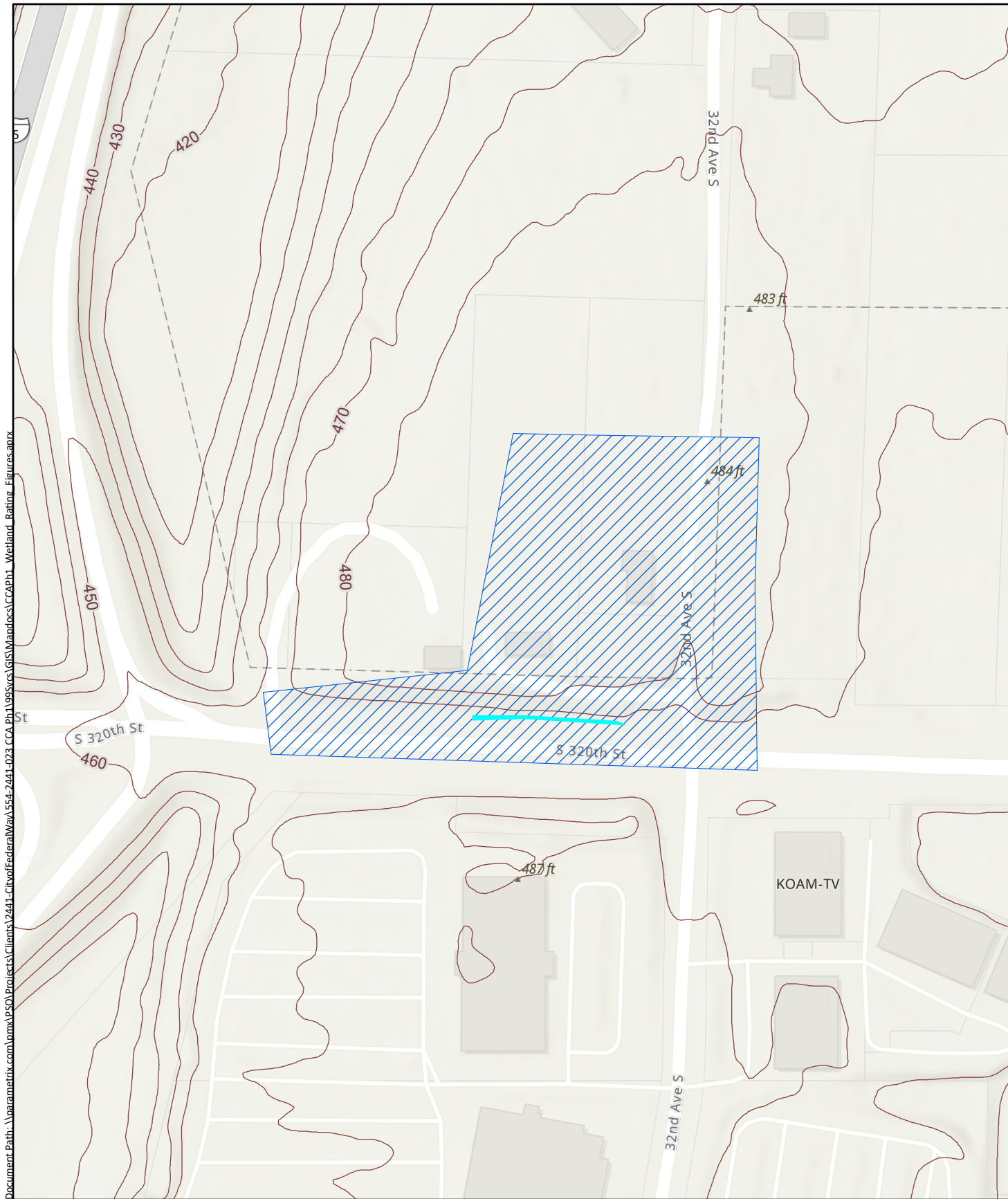
-  Wetland
(Approx. Boundary)
-  150-ft Buffer

- Hydroperiod**
-  Occasionally flooded

**Wetland W3
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA




Document Path: \\parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way, USGS



 Wetland (Approx. Boundary)

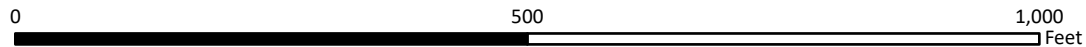
 Contributing Basin

 Contours

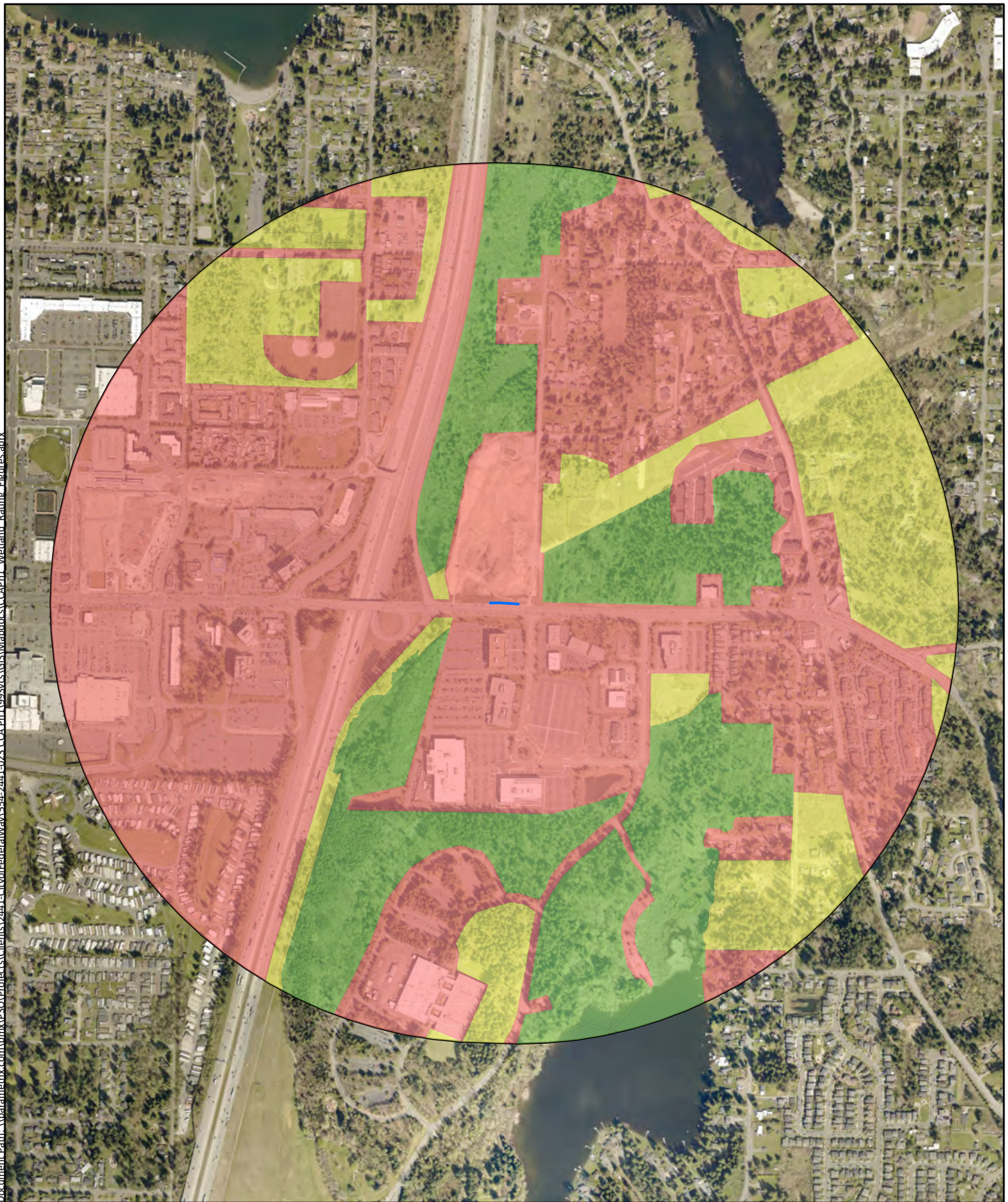
**Wetland W3
Contributing Basin**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph11995\GIS\Mandocs\CCAPh1 Wetland Rating Figures.aprx








Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

-  Wetland
(Approx. Boundary)
-  1-km Polygon

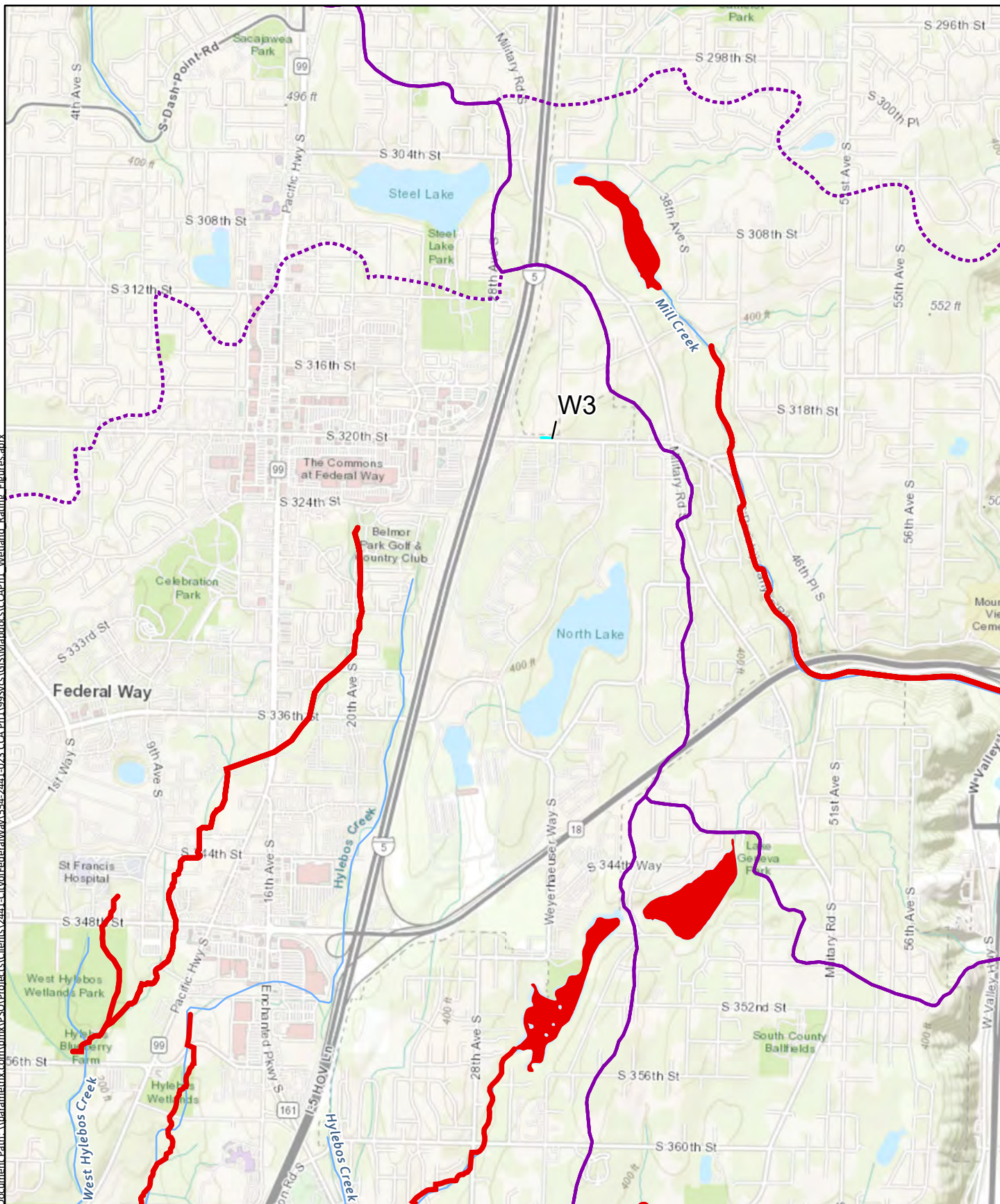
- Land Use**
-  High
 -  Low/moderate
 -  Undisturbed

Wetland W3
Land Use Intensity

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pm\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\srcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way, USGS



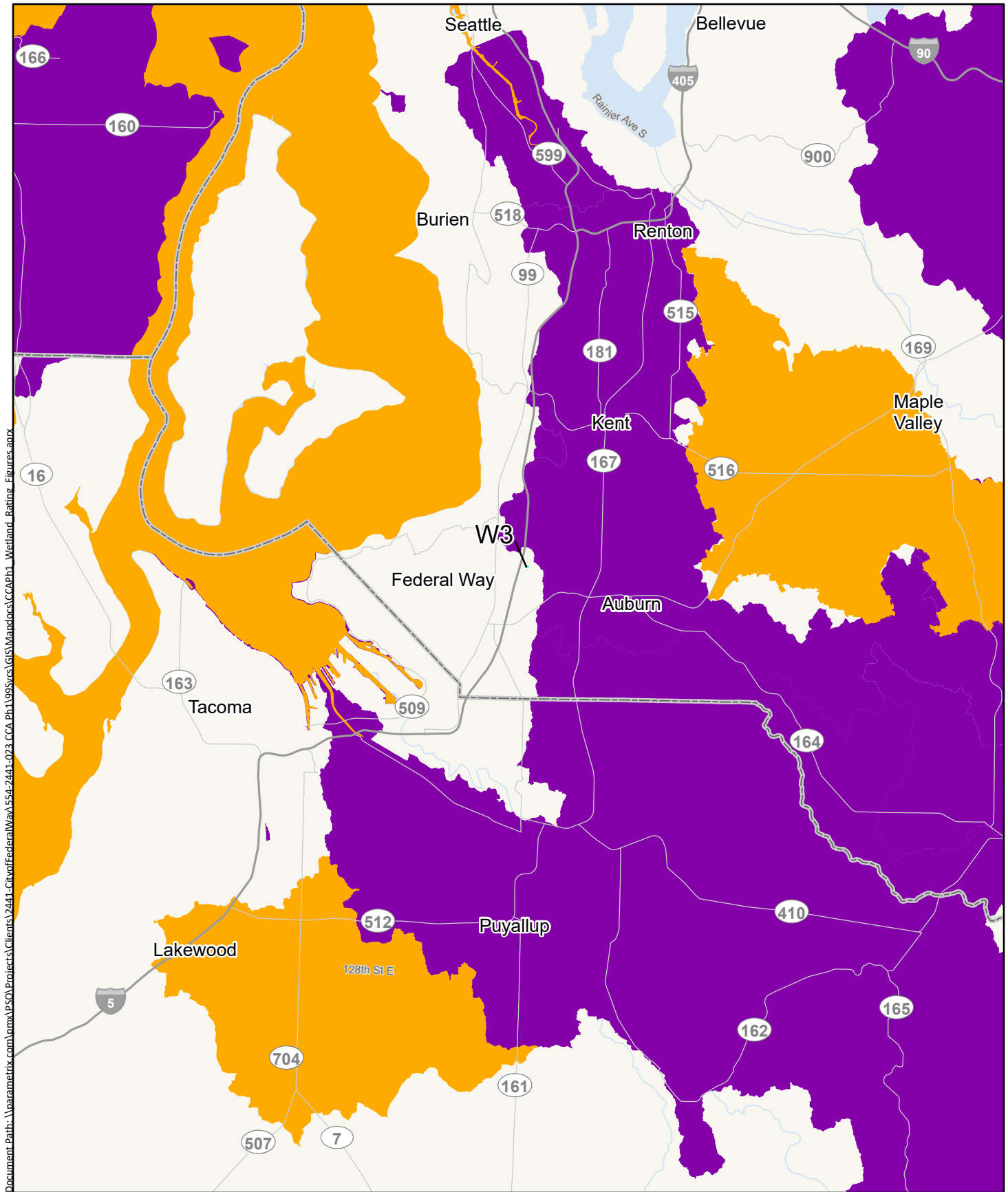
0 0.5 1
Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W3
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

Wetland W3

TMDLs (Total Maximum Daily Loads)

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W5 Date of site visit: 8/13/2020Rated by Per Johnson Trained by Ecology? ☒ Yes ☐ No Date of training Yr 2014HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☒ Yes ☐ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** I/II (based on functions ☒ 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	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	H	M	H	
Landscape Potential	H	H	L	
Value	M	H	M	
Score Based on Ratings	8	8	6	Total 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	I
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ **NO** - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*
*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ **NO** - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).
☒ **NO** - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.
☒ **NO** - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.
☒ **NO** - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

There are portions of the unit that meet the riverine criteria, slope criteria, and depressional criteria, therefore the HGM class used for this rating is depressional. A portion of the wetland is a peat bog; therefore this wetland was assigned dual rating for functions and special characteristics (bog).

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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0		4
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	2
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1 Add the points in the boxes above		13

Rating of Site Potential If score is: ☒ 12 - 16 = H ☐ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		1
Source <u>Olympic pipeline maintenance, I-5</u>	Yes = 1 No = 0	
Total for D 2 Add the points in the boxes above		3

Rating of Landscape Potential If score is: ☒ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above		1

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	3
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	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4		8

Add the points in the boxes above

Rating of Site Potential If score is: ☐ 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 function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5		3

Add the points in the boxes above

Rating of Landscape Potential If score is: ☒ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		2
<input type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
<input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why	points = 0	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 No = 0	0
Total for D 6		2

Add the points in the boxes above

Rating of Value If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|--|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 4 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|---|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 2 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| | | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

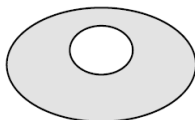
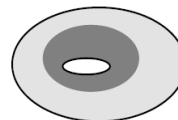
Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

- | | | |
|-----------------|----------------|------------|
| If you counted: | > 19 species | points = 2 |
| | 5 - 19 species | points = 1 |
| | < 5 species | points = 0 |

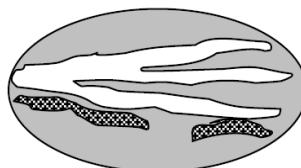
H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*

**None** = 0 points**Low** = 1 point**Moderate** = 2 points

3

All three diagrams
in this row are
HIGH = 3 points



<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata) 		5
<p>Total for H 1</p>		<p>Add the points in the boxes above</p> <p>16</p>
<p>Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input type="checkbox"/> 0 - 6 = L <i>Record the rating on the first page</i></p>		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 6 % undisturbed habitat + (_____ 2 % moderate & low intensity land uses / 2) = 7% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 21 % undisturbed habitat + (_____ 13 % moderate & low intensity land uses / 2) = 27.5% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2		-1
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = L <i>Record the rating on the first page</i>		

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score that applies to the wetland being rated.</p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan <p>Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>	1
<p>Rating of Value If Score is: <input type="checkbox"/> 2 = H <input checked="" type="checkbox"/> 1 = M <input type="checkbox"/> 0 = L</p>	

Record the rating on the first page

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

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Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

Cowardin Class

- Palustrine Emergent (PEM)
- Palustrine Scrub Shrub (PSS)
- Palustrine Forested (PFO)

Wetland W5

Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Weyerhaeuser Tr/Acrd

Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

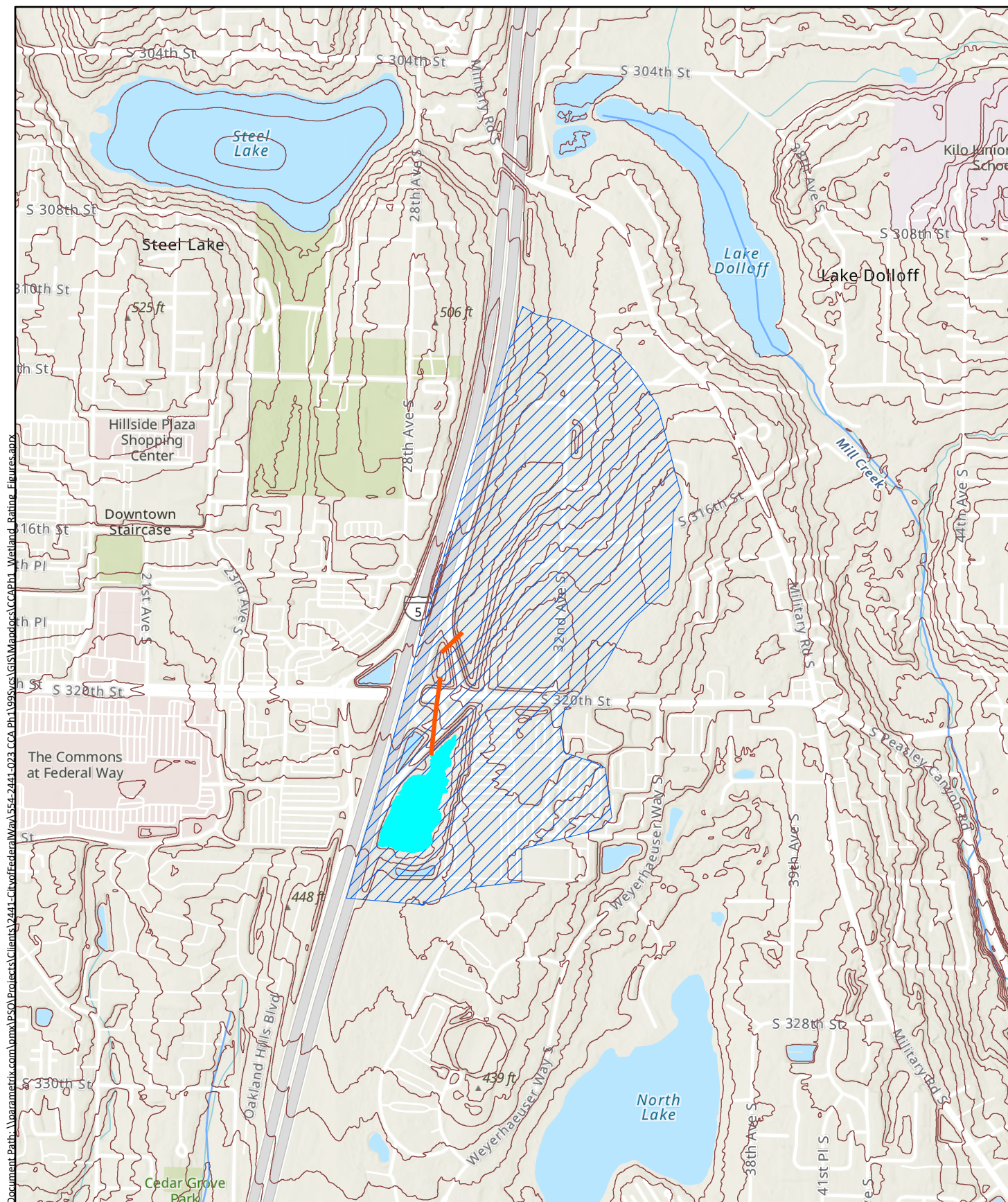
- Wetland
(Approx. Boundary)
- 150-ft Buffer
- Stream (Piped)
- Delineated OHWM

- Wetland Outlet
- Hydroperiod**
 - Saturated only
 - Occasionally flooded
 - Seasonally flooded

Wetland W5 Hydroperiods

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

**ParametriX**

Source: King County,
City of Federal Way, USGS



0 500 1,000 Feet

 Wetland (Approx. Boundary)

 Contributing Basin

Contours

Streams (National Hydrography Dataset)

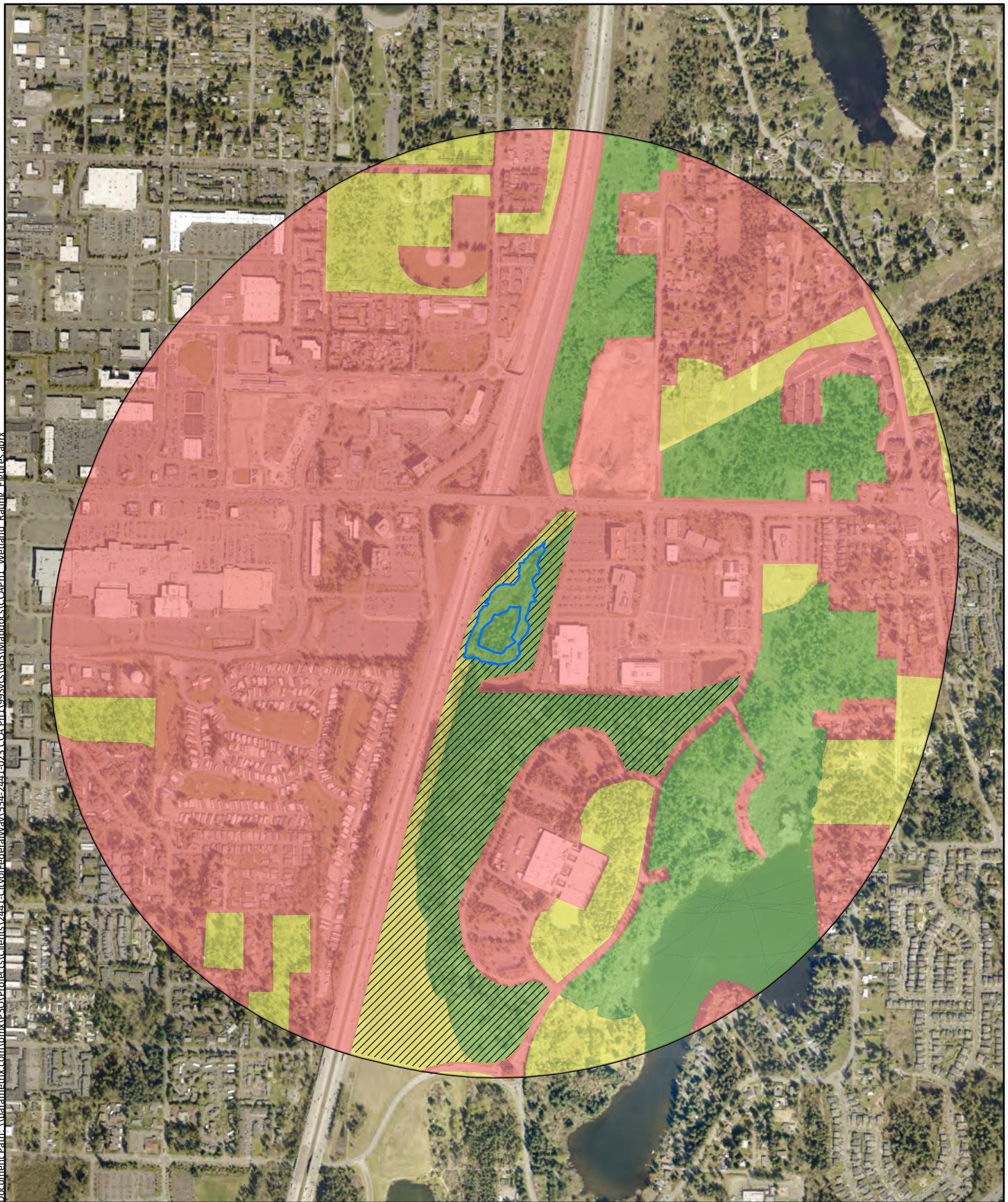
- Stream (Piped)

Wetland W5 Contributing Basin

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

- Wetland
(Approx. Boundary)
- 1-km Polygon

Accessible Habitat

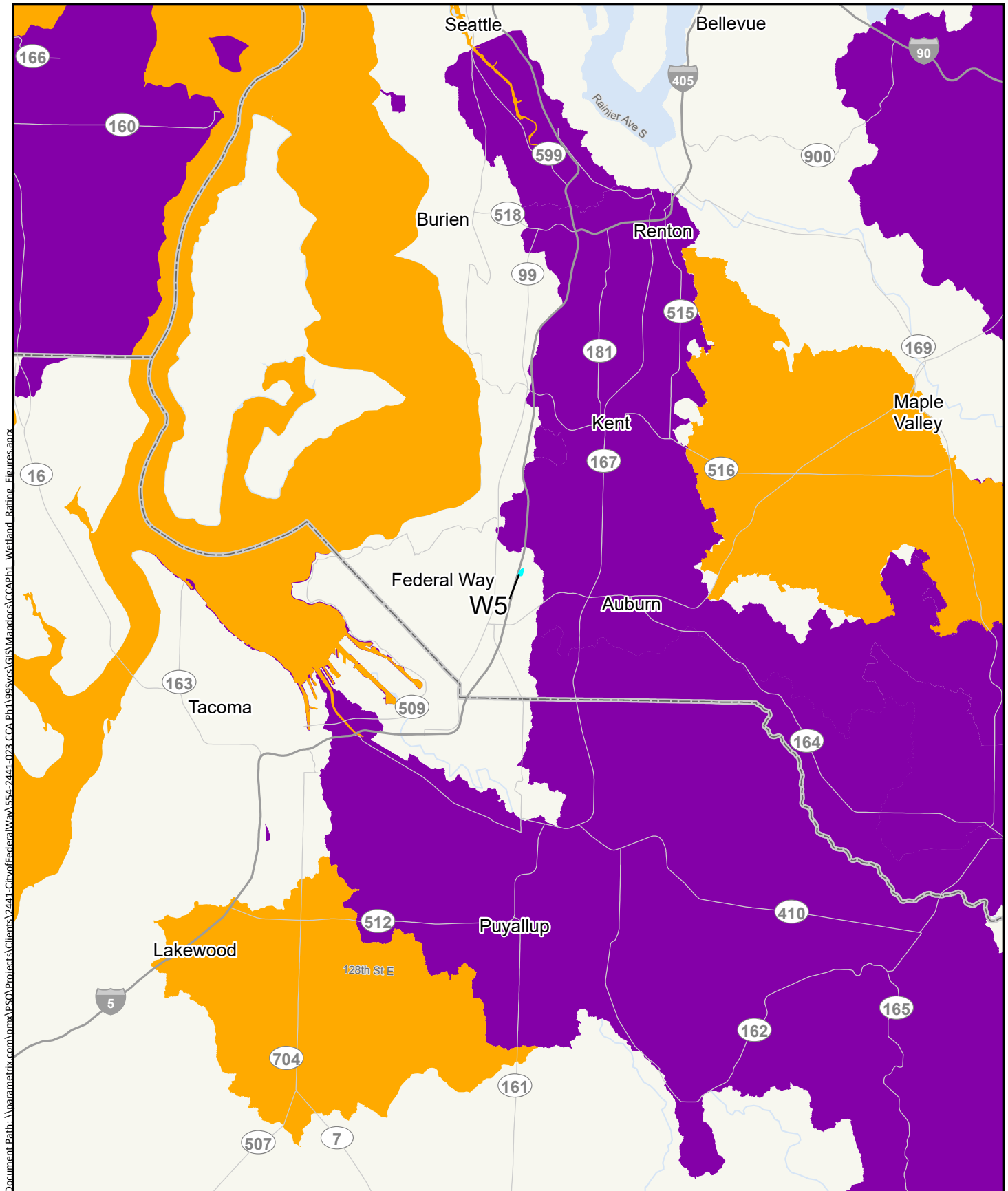
Land Use

- High
- Low/moderate
- Undisturbed

**Wetland W5
Land Use Intensity**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



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Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

Wetland W5

TMDLs (Total Maximum Daily Loads)

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W7 Date of site visit: 8/18/2020Rated by Per Johnson, Aaron Thom Trained by Ecology? ☒ Yes ☐ No Date of training 2014, 2018HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

☐ **Category I** - Total score = 23 - 27
☐ **Category II** - Total score = 20 - 22
☒ **Category III** - Total score = 16 - 19
☐ **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	L	
Landscape Potential	H	H	L	
Value	M	H	L	Total
Score Based on Ratings	7	8	3	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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ **NO** - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*
*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ **NO** - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).
☒ **NO** - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.
☒ **NO** - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.
☒ **NO** - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

Wetland W7 receives water from overland flow, its outlet is a stormwater catchbasin on the west shoulder of southbound I-5.

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. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).		0
Yes = 4 No = 0		
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	2
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1		9
Add the points in the boxes above		

Rating of Site Potential If score is: ☐ 12 - 16 = H ☒ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		1
Source <u>I-5</u>	Yes = 1 No = 0	
Total for D 2		3
Add the points in the boxes above		

Rating of Landscape Potential If score is: ☒ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3		1
Add the points in the boxes above		

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	3
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	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4		8

Add the points in the boxes above

Rating of Site Potential If score is: ☐ 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 function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5		3

Add the points in the boxes above

Rating of Landscape Potential If score is: ☒ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		2
<input type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
<input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why	points = 0	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 No = 0	0
Total for D 6		2

Add the points in the boxes above

Rating of Value If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 0 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

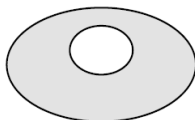
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 0 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



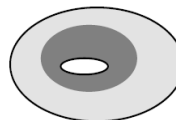
None = 0 points



Low = 1 point

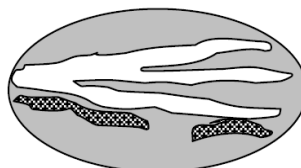
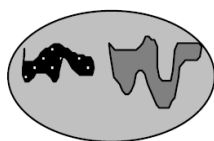


Moderate = 2 points



0

All three diagrams in this row are **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		0
<input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)		
<input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland		
<input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)		
<input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)		
<input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)		
<input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1		1
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input checked="" type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?			
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 0 % undisturbed habitat + (_____ 3 % moderate & low intensity land uses / 2) = 1.5%			0
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0			
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 10 % undisturbed habitat + (_____ 24 % moderate & low intensity land uses / 2) = 22%			
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0			
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0			
Total for H 2		-1	
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose <i>only the highest score that applies to the wetland being rated</i>.		
Site meets ANY of the following criteria: points = 2		0
<input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)		
<input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)		
<input type="checkbox"/> It is mapped as a location for an individual WDFW priority species		
<input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources		
<input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan		
Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1		
Site does not meet any of the criteria above points = 0		
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input type="checkbox"/> 1 = M <input checked="" type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\parametrix.com\pm\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx






Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

-  Wetland
(Approx. Boundary)
-  150-ft Buffer

Cowardin Class
 Palustrine Emergent (PEM)

Wetland W7
Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: U:\P50\Projects\Clients\2441-City of Federal Way\554-2441-023 CCA Ph1\995s\GIS\Mandocs\CCAP11_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

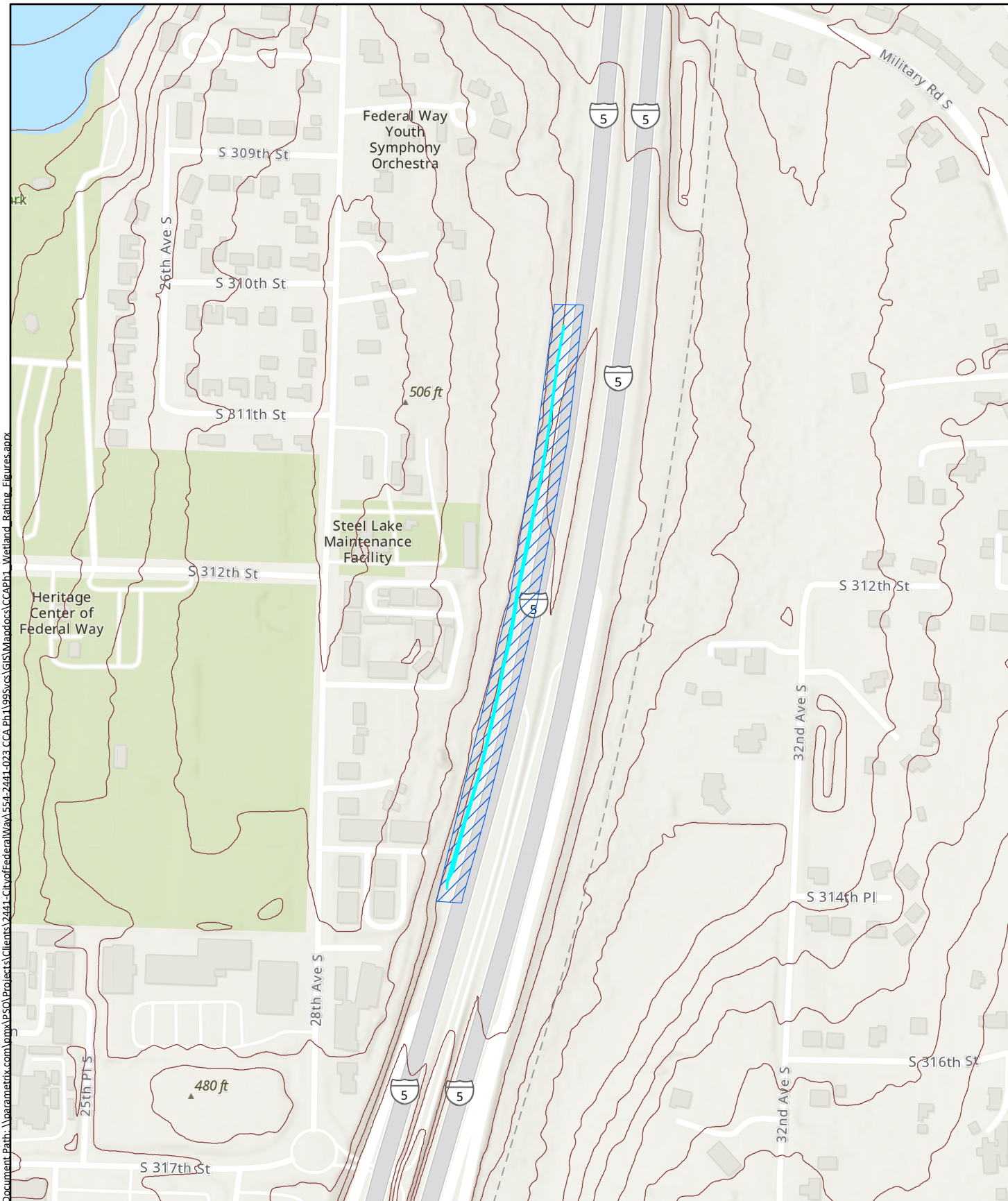
- Wetland
(Approx. Boundary)
- 150-ft Buffer

- Wetland Outlet
- Hydroperiod**
- Occasionally flooded
- Seasonally flooded

Wetland W7
Hydroperiods

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph11995\GIS\Mapdocs\CCAPh1 Wetland Rating Figures.aprx

Parametrix

Source: King County,
City of Federal Way, USGS



0 500 1,000
Feet

Wetland (Approx. Boundary)

Contributing Basin

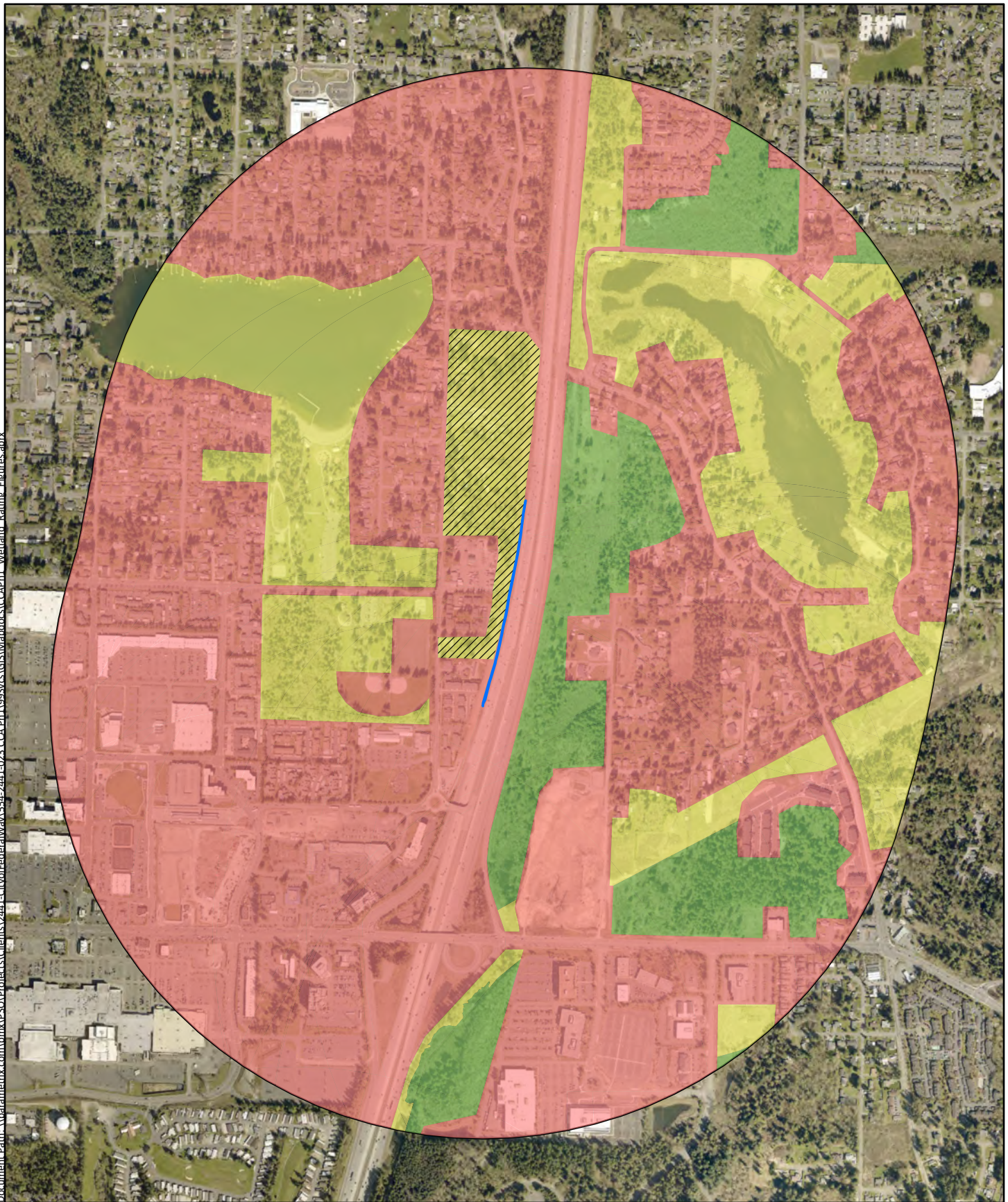
Contours

**Wetland W7
Contributing Basin**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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
Parametrix

Source: King County,
City of Federal Way






0 500 1,000
Feet

-  Wetland
(Approx. Boundary)
-  1-km Polygon

 Accessible Habitat

Land Use

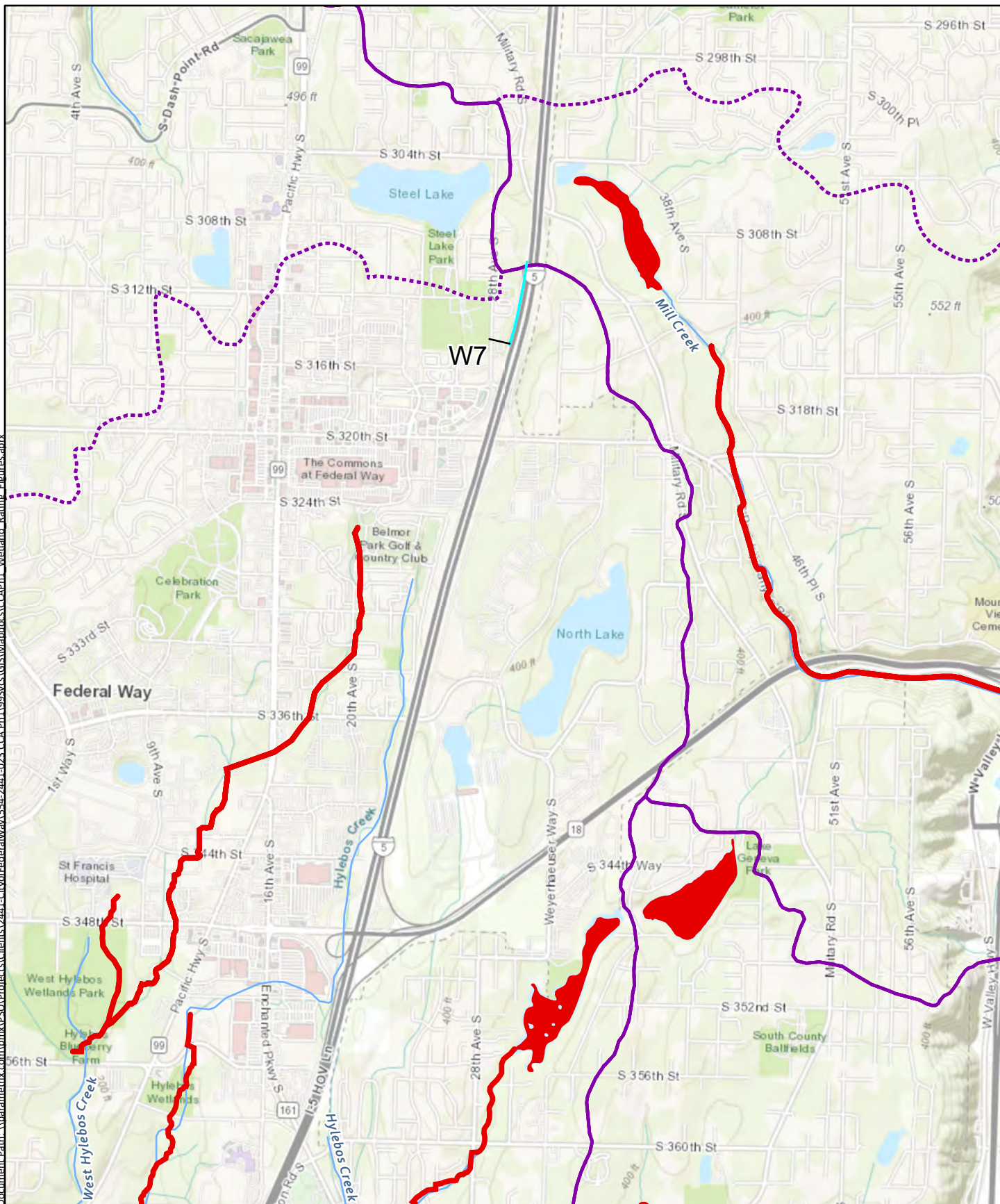
-  High
-  Low/moderate
-  Undisturbed

**Wetland W7
Land Use Intensity**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pm\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\srcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way, USGS



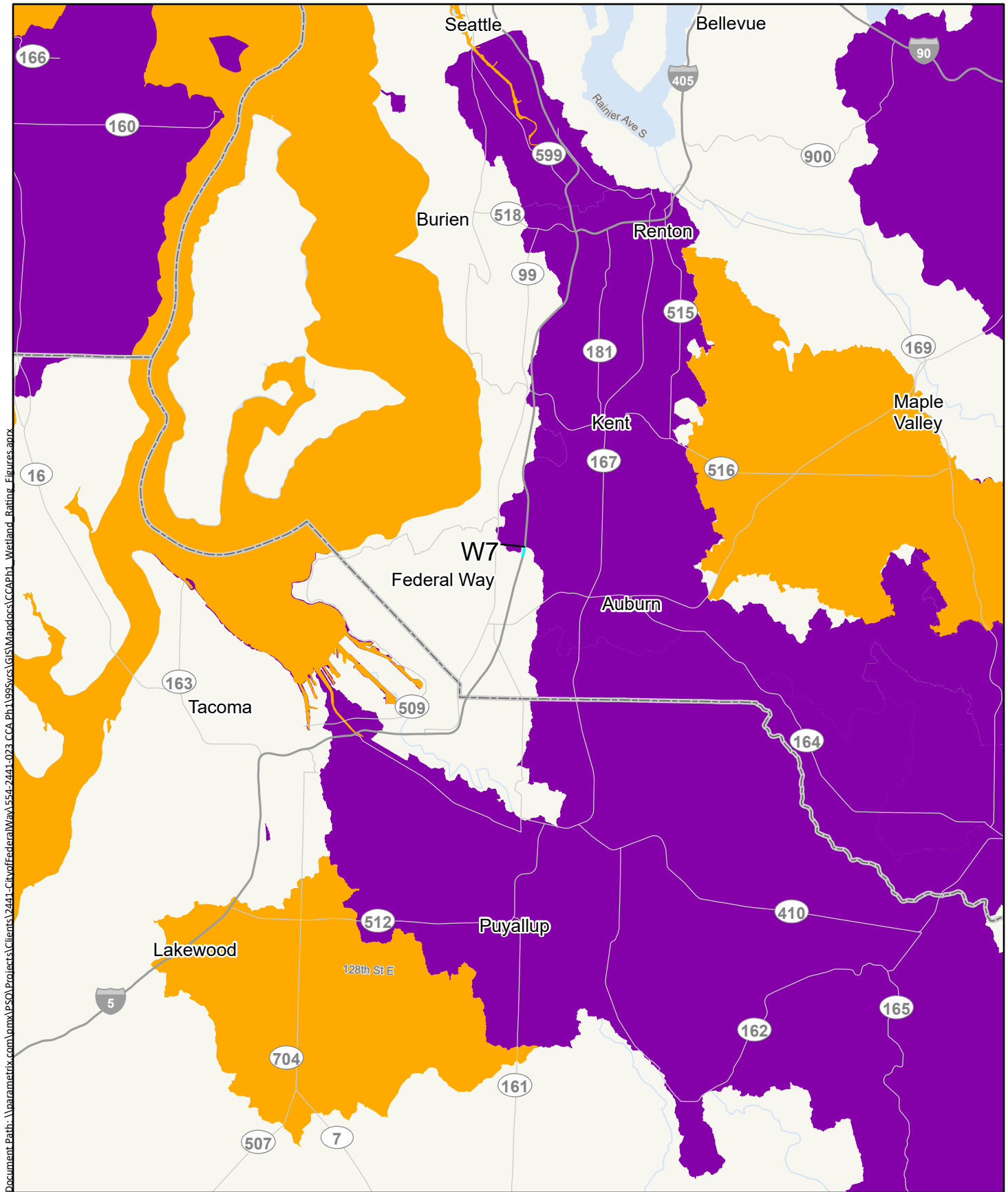
0 0.5 1
Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W7
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph11995\GIS\Mapdocs\CCAPh1 Wetland Rating Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

Wetland W7

TMDLs (Total Maximum Daily Loads)

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W9 Date of site visit: 8/18/2020Rated by Per Johnson, Aaron Thom Trained by Ecology? ☒ Yes ☐ No Date of training 2014, 2018HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** III (based on functions ☒ 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	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	L	
Landscape Potential	M	M	L	
Value	M	H	L	Total
Score Based on Ratings	6	7	3	16

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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ NO - go to 2 ☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ NO - go to 3 ☐ YES - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

- ☒ NO - go to 4 ☐ YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☒ The wetland is on a slope (*slope can be very gradual*),
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☒ The water leaves the wetland **without being impounded**.

- ☐ NO - go to 5 ☒ YES - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

- ☐ NO - go to 6 ☐ YES - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the*

☐ NO - go to 7

☐ YES - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ YES - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

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. Characteristics of the average slope of the wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)

Slope is 1% or less	points = 3	1
Slope is > 1% - 2%	points = 2	
Slope is > 2% - 5%	points = 1	
Slope is greater than 5%	points = 0	

S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions):

Yes = 3 No = 0

0

S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:

Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.*

Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	6
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	

Total for S 1

Add the points in the boxes above

7

Rating of Site Potential If score is: ☐ 12 = H ☒ 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 150 ft on the uphill side of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

1

S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?

Other Sources I-5

Yes = 1 No = 0

1

Total for S 2

Add the points in the boxes above

2

Rating of Landscape Potential If score is: ☒ 1 - 2 = M ☐ 0 = L

Record the rating on the first page

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 = 1 No = 0

0

S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.*

Yes = 1 No = 0

1

S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which the unit is found?*

Yes = 2 No = 0

0

Total for S 3

Add the points in the boxes above

1

Rating of Value If score is: ☐ 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 erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows*

Dense, uncut, **rigid** plants cover > 90% of the area of the wetland

points = 1

All other conditions

points = 0

1

Rating of Site Potential If score is: ☒ **1 = M** ☐ **0 = L**

Record the rating on the first page

S 5.0. Does the landscape have the potential to support 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 = 1 No = 0

1

Rating of Landscape Potential If score is: ☒ **1 = M** ☐ **0 = L**

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:

The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)

points = 2

Surface flooding problems are in a sub-basin farther down-gradient

points = 1

No flooding problems anywhere downstream

points = 0

2

S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for S 6

Add the points in the boxes above

2**Rating of Value** If score is: ☒ **2 - 4 = H** ☐ **1 = M** ☐ **0 = L**

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

W9 receives water from surface/overland flow, it's outlet is a catchbasin.

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 0 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 0 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

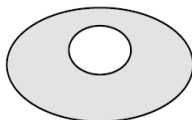
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 0 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



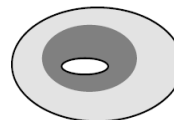
None = 0 points



Low = 1 point

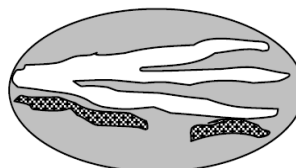
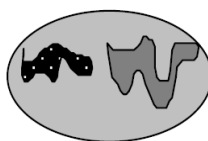


Moderate = 2 points



0

All three diagrams in this row are
HIGH = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		0
<input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)		
Total for H 1 Add the points in the boxes above		
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input checked="" type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 0 % undisturbed habitat + (_____ 0 % moderate & low intensity land uses / 2) = 0% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 19 % undisturbed habitat + (_____ 9 % moderate & low intensity land uses / 2) = 23.5% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2 Add the points in the boxes above		-1
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose <i>only the highest score that applies to the wetland being rated</i>. Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		0
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input type="checkbox"/> 1 = M <input checked="" type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

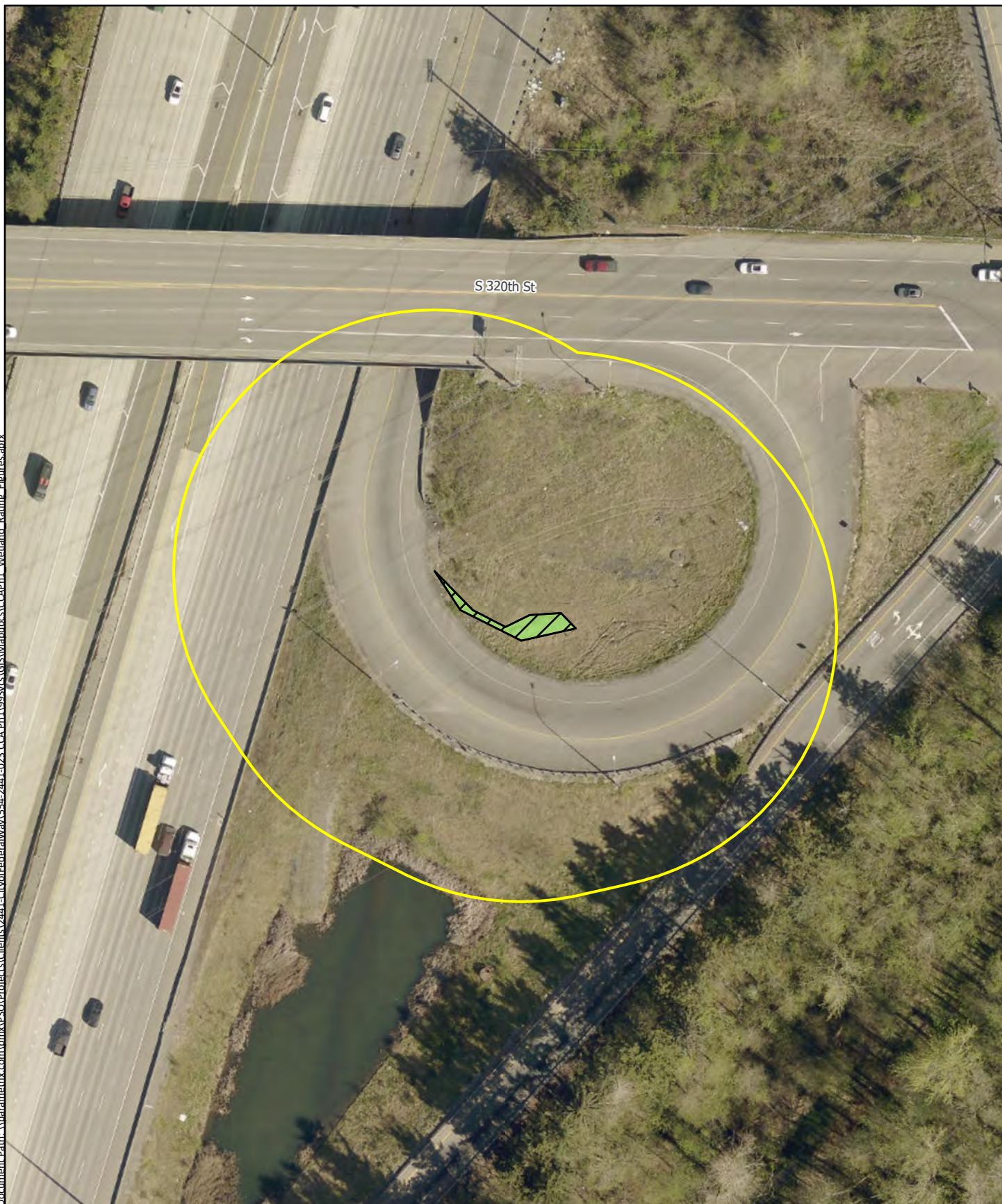
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input checked="" type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPH1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



- Wetland
(Approx. Boundary)
- 150-ft Buffer

- Dense Plant Cover
- Cowardin Class**
- Palustrine Emergent (PEM)

0 50 100
Feet

Wetland W9
Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPH1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

Wetland
(Approx. Boundary)
150-ft Buffer

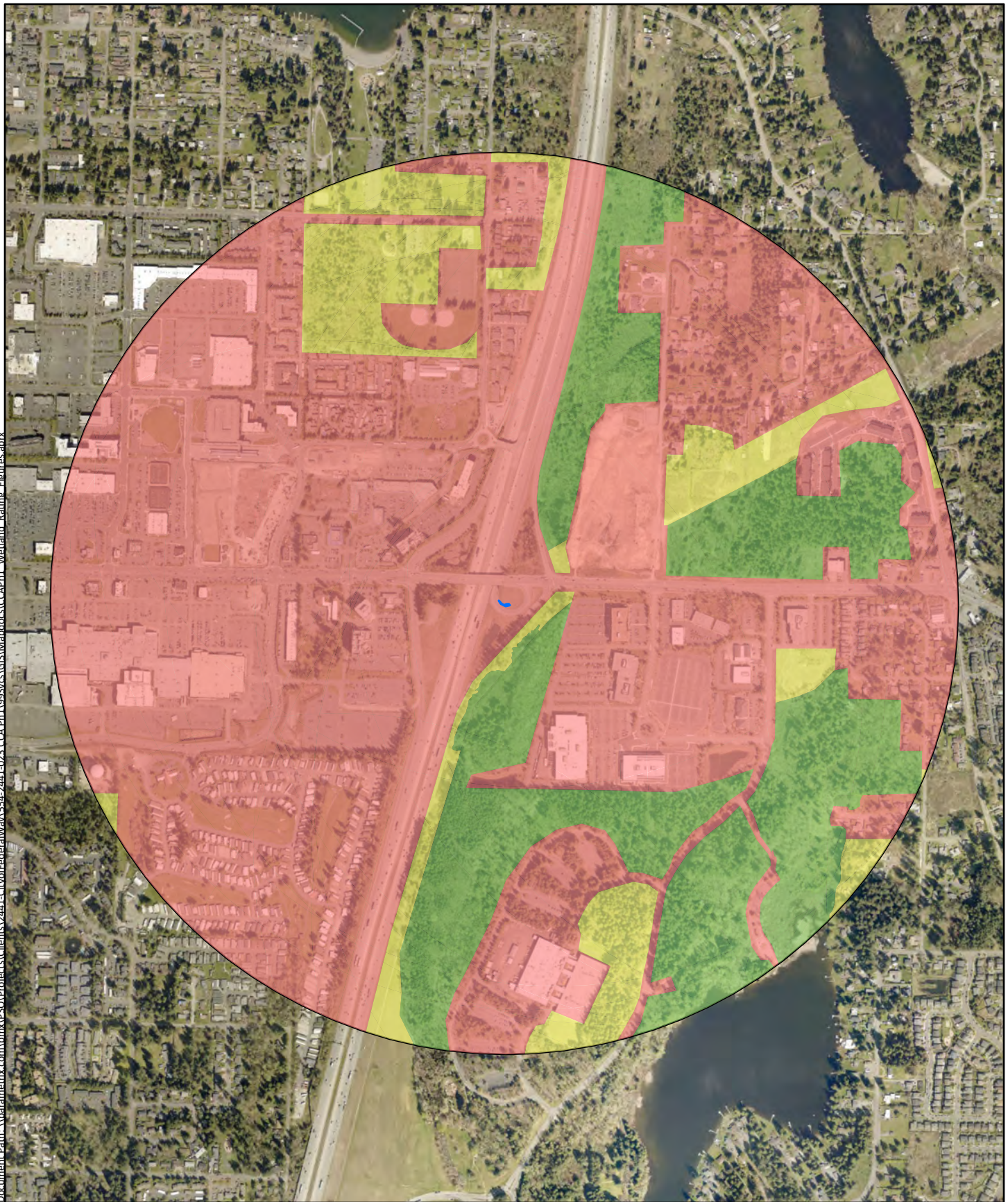
Hydroperiod
Saturated only

**Wetland W9
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx








Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

-  Wetland
(Approx. Boundary)
-  1-km Polygon

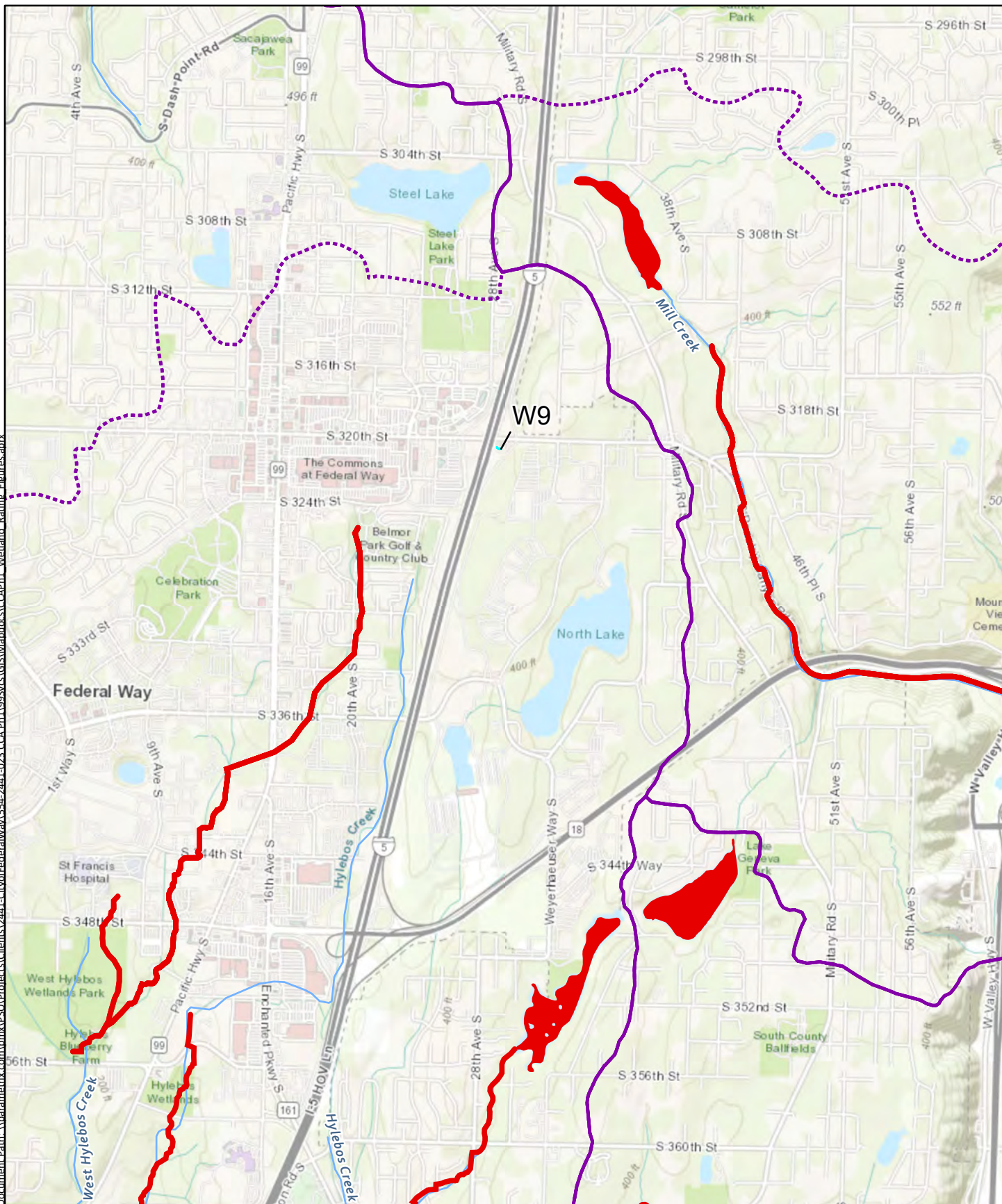
- Land Use**
-  High
 -  Low/moderate
 -  Undisturbed

Wetland W9
Land Use Intensity

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pm\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\srcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way, USGS



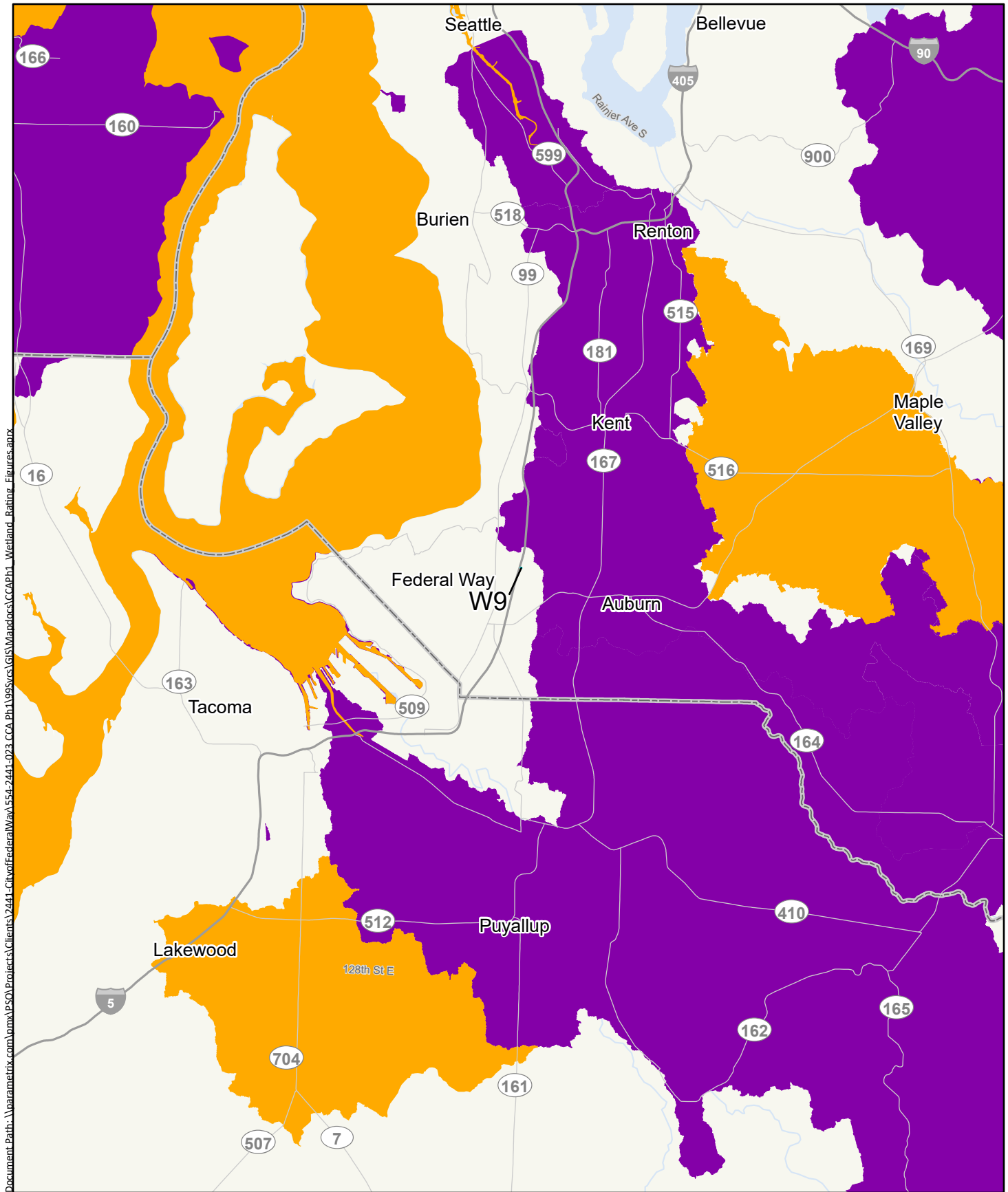
0 0.5 1
Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W9
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

Wetland W9

TMDLs (Total Maximum Daily Loads)

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W10 Date of site visit: 8/19/2020Rated by Per Johnson, Aaron Thom Trained by Ecology? ☒ Yes ☐ No Date of training 2014, 2018HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☒ Yes ☐ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** III (based on functions ☒ 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	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	L	L	M	
Landscape Potential	H	H	L	
Value	M	H	M	
Score Based on Ratings	6	7	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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ **NO** - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ **NO** - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

- ☒ **NO** - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☒ The wetland is on a slope (*slope can be very gradual*),
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.

- ☐ **NO** - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

- ☒ **NO** - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

W10 has slope and depressional HGM classes, so was rated as depressional.

W10 receives water through a culvert from W11 (not flowing at the time of the site visit). Its outlet is a submerged culvert that discharges to 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. Characteristics of surface water outflows from the wetland:**

Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	1
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input checked="" type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	

D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).

Yes = 4 No = 0

0

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

Wetland has persistent, ungrazed, plants > 95% of area	points = 5	1
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	

D 1.4. Characteristics of seasonal ponding or inundation:

<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		2
Area seasonally ponded is > 1/2 total area of wetland	points = 4	
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	

Total for D 1

Add the points in the boxes above

4

Rating of Site Potential If score is: ☐ 12 - 16 = H ☐ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		1
Source <u>I-5</u>	Yes = 1 No = 0	

Total for D 2

Add the points in the boxes above

3

Rating of Landscape Potential If score is: ☒ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0

Total for D 3

Add the points in the boxes above

1

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 0 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.*

- | | | |
|--|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 3 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.*

- | | | |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 0 |
| 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 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4

Add the points in the boxes above

3**Rating of Site Potential** If score is: ☐ 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 function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 **1**D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 **1**D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 **1**

Total for D 5

Add the points in the boxes above

3**Rating of Landscape Potential** If score is: ☒ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.*

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): | | 2 |
| <input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| <input type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 **0**

Total for D 6

Add the points in the boxes above

2**Rating of Value** If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|--|----------------------------------|---|
| <input checked="" type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 4 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|----------|
| <input checked="" type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 2 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft². *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

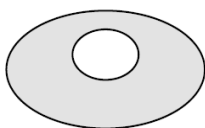
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



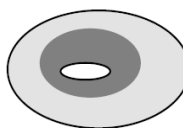
None = 0 points



Low = 1 point

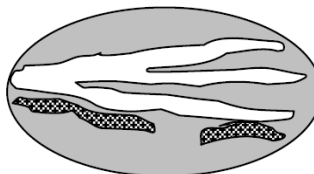
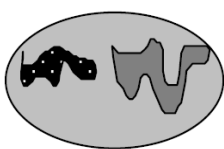


Moderate = 2 points



3

All three diagrams in this row are **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		3
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1		
Add the points in the boxes above		
13		

Rating of Site Potential If Score is: ☐ 15 - 18 = H ☒ 7 - 14 = M ☐ 0 - 6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 0 % undisturbed habitat + (0 % moderate & low intensity land uses / 2) = 0%		
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 19 % undisturbed habitat + (11 % moderate & low intensity land uses / 2) = 24.5%		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2		-1

Rating of Landscape Potential If Score is: ☐ 4 - 6 = H ☐ 1 - 3 = M ☒ < 1 = 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? Choose only the highest score that applies to the wetland being rated.		
Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan		1
Site has 1 or 2 priority habitats (listed on next page) within 100m points = 1		
Site does not meet any of the criteria above points = 0		

Rating of Value If Score is: ☐ 2 = H ☒ 1 = M ☐ 0 = L Record the rating on the first page

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

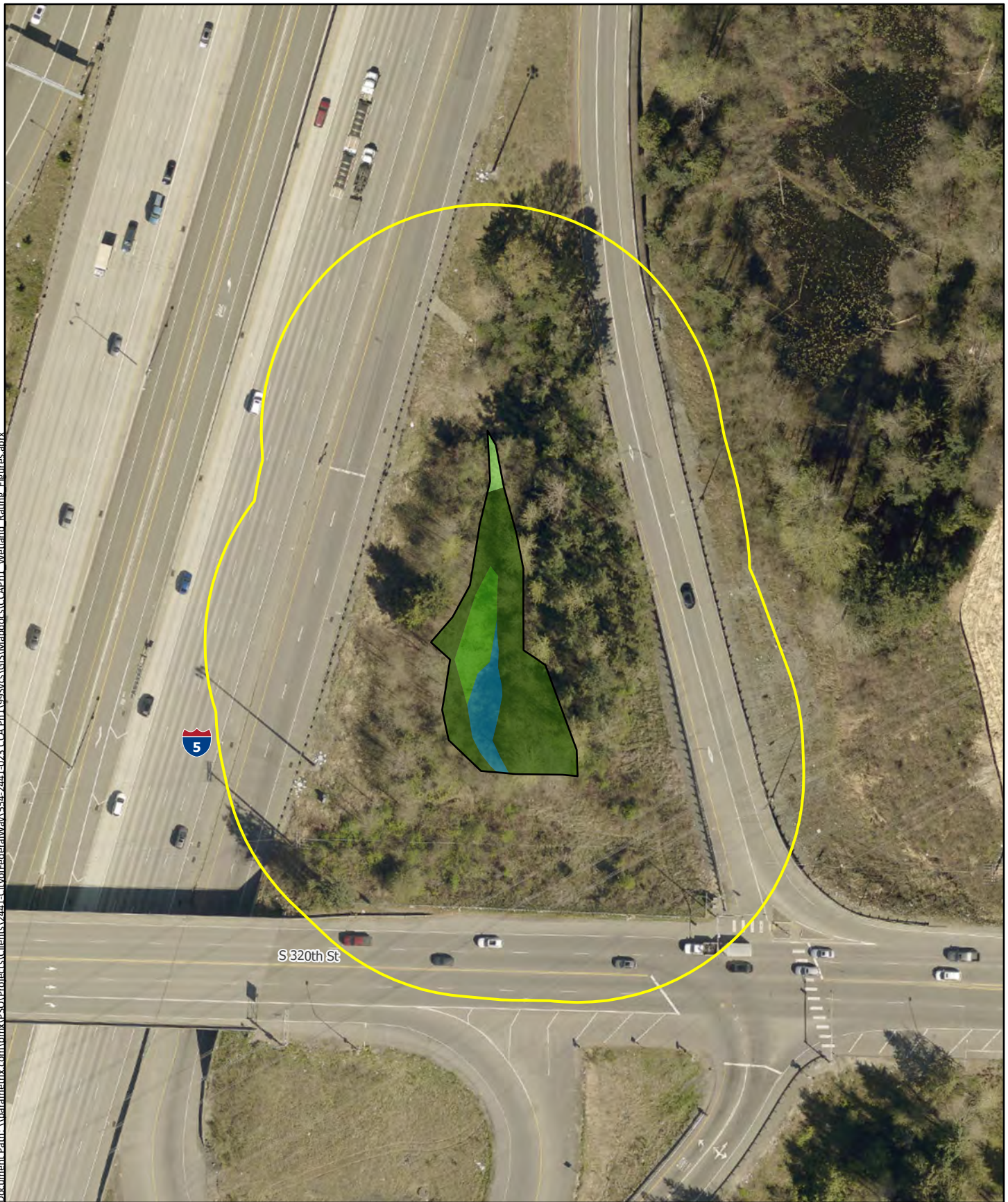
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasetsearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input checked="" type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input checked="" type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\parametrix.com\pm\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

Cowardin Class

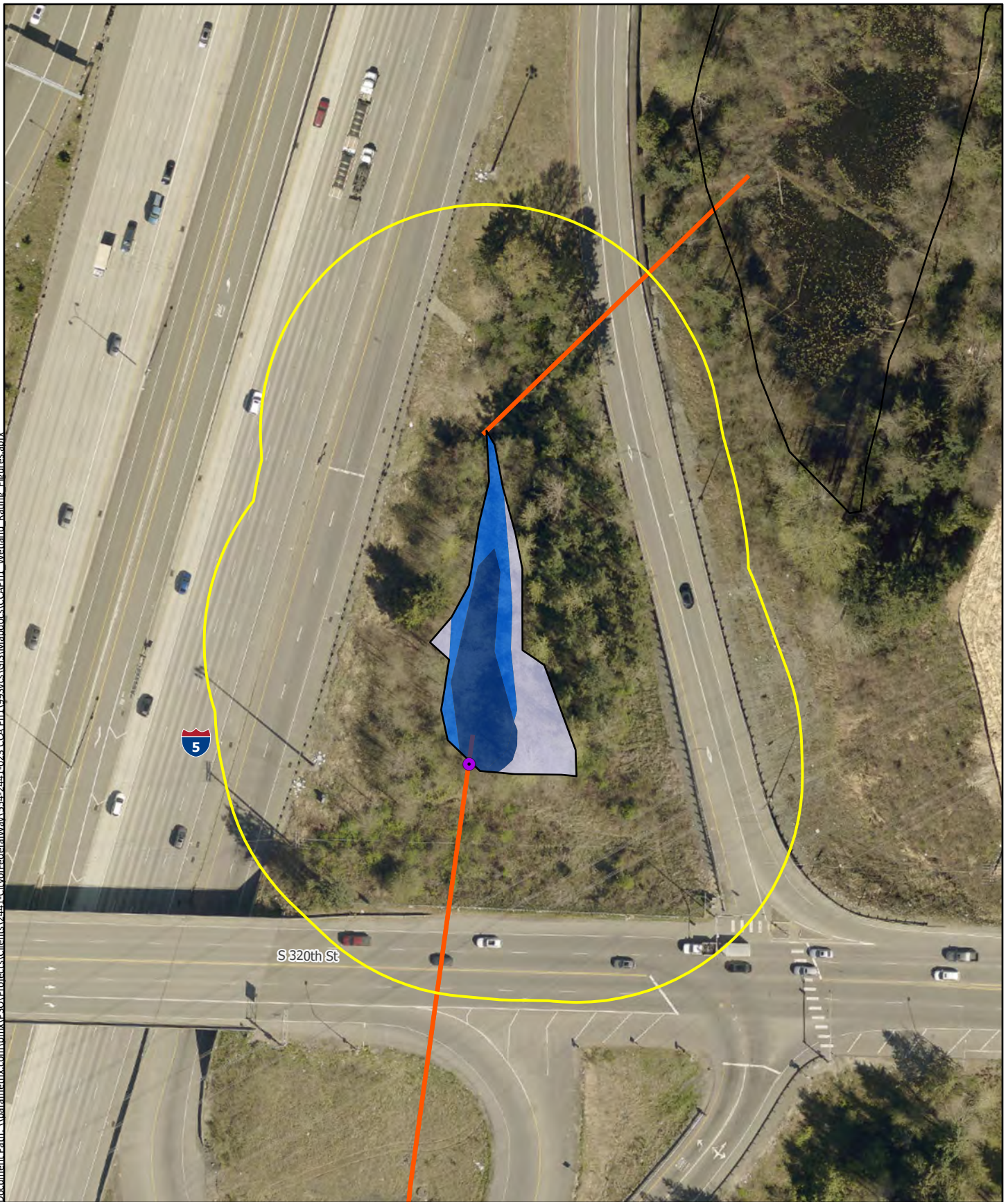
- Aquatic Bed (AB)
- Palustrine Emergent (PEM)
- Palustrine Scrub Shrub (PSS)
- Palustrine Forested (PFO)

Wetland W10
Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

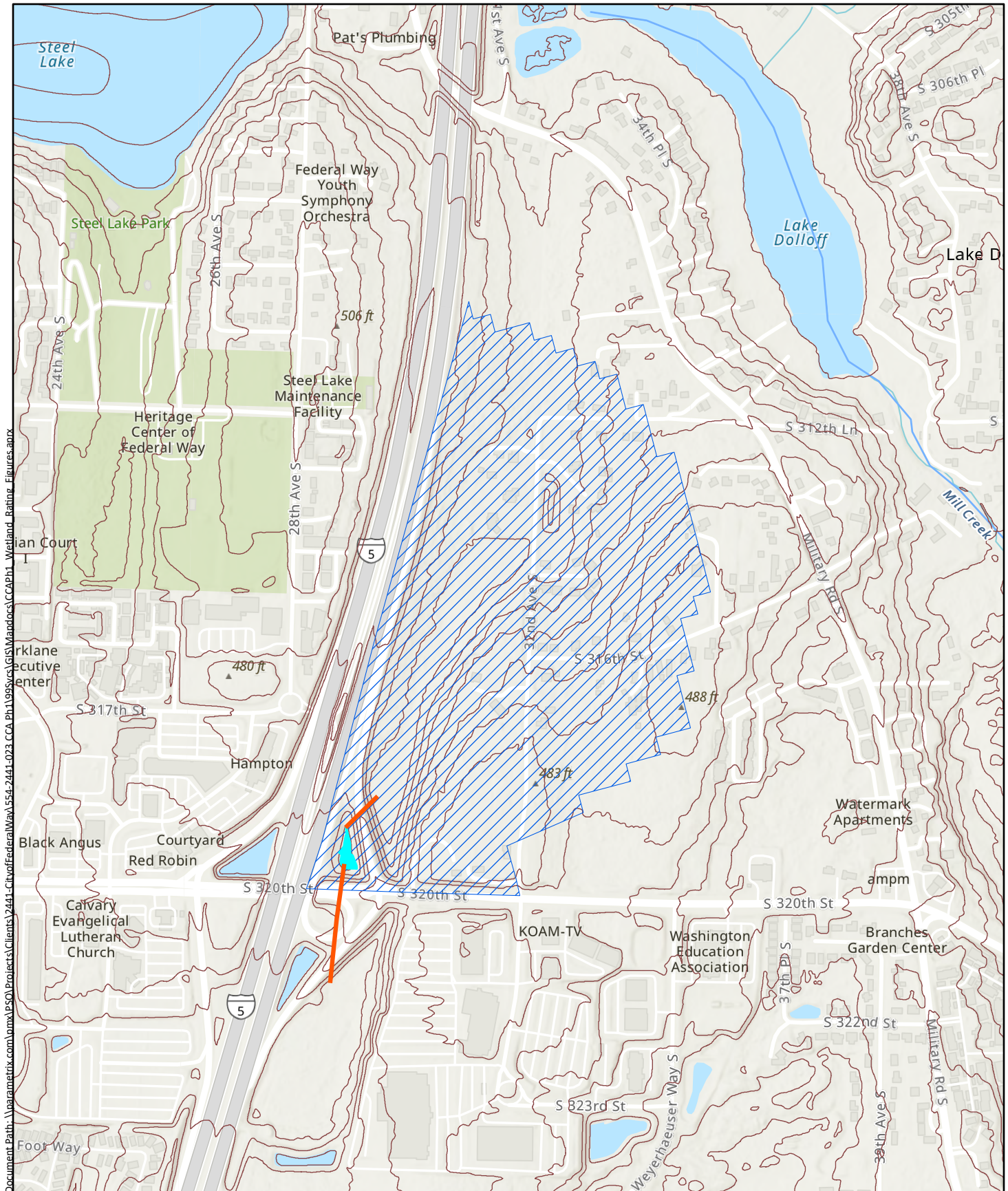
- Wetland
(Approx. Boundary)
- 150-ft Buffer
- Stream (Piped)

- Wetland Outlet
- Hydroperiod**
 - Saturated only
 - Seasonally flooded
 - Permanently flooded

**Wetland W10
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



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Parametrix

Source: King County,
City of Federal Way, USGS



0 500 1,000
Feet

■ Wetland (Approx. Boundary)

▨ Contributing Basin

— Contours

— Streams (National
Hydrography Dataset)

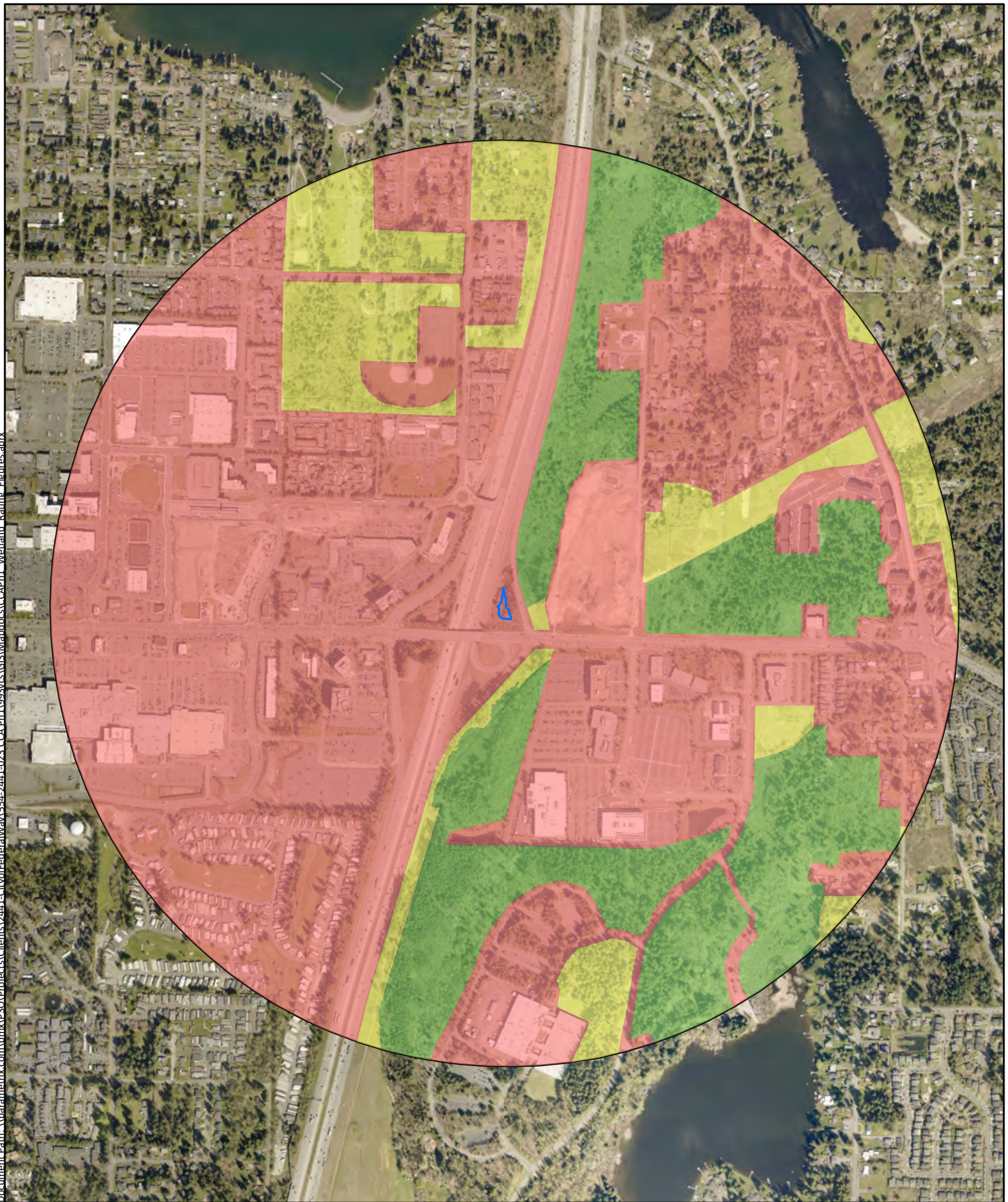
— Stream (Piped)

Wetland W10 Contributing Basin

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPH1-Wetland-Rating-Figures.aprx








Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

-  Wetland
(Approx. Boundary)
-  1-km Polygon

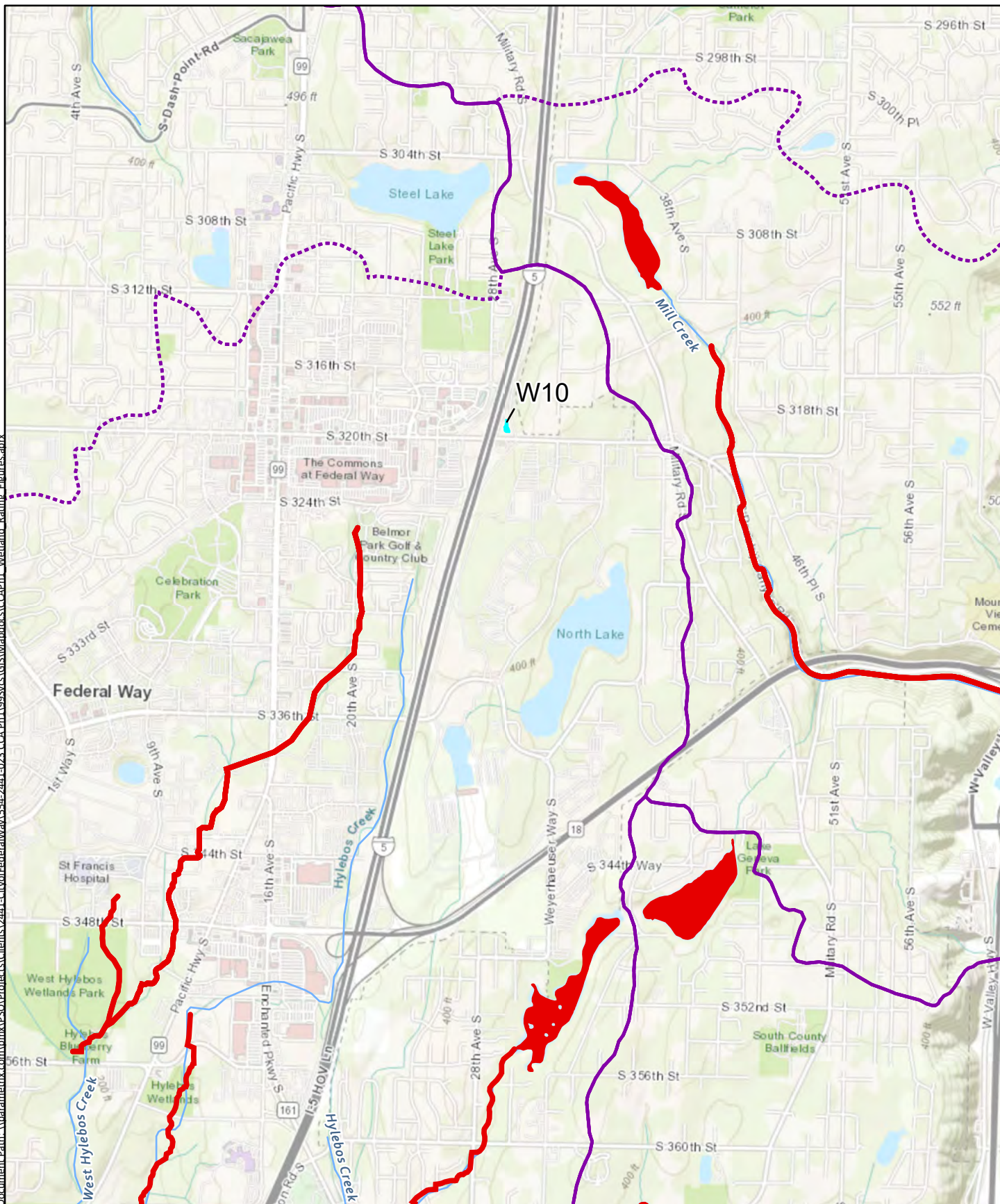
- Land Use**
-  High
 -  Low/moderate
 -  Undisturbed

Wetland W10
Land Use Intensity

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pm\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\srcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way, USGS



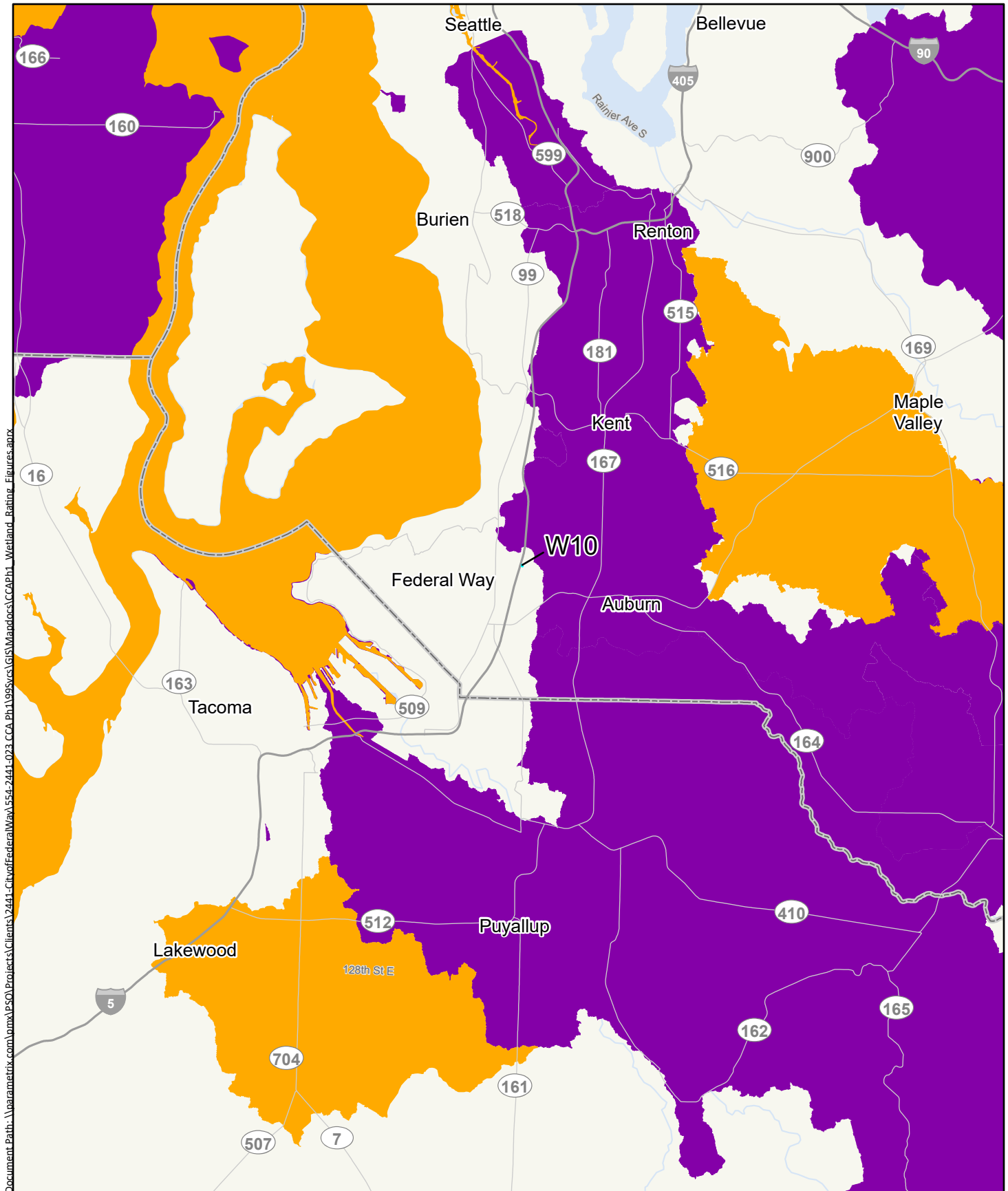
0 0.5 1
Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W10
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

**Wetland W10
TMDLs (Total Maximum Daily Loads)**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSOI\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph11995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W11 Date of site visit: 8/19/2020Rated by Per Johnson, Aaron Thom Trained by Ecology? ☒ Yes ☐ No Date of training 2014, 2018HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map King County iMap**OVERALL WETLAND CATEGORY** II (based on functions ☒ 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	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	H	M	H	
Landscape Potential	H	H	L	
Value	M	H	M	
Score Based on Ratings	8	8	6	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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ **NO** - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*
*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ **NO** - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

- ☒ **NO** - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.

- ☒ **NO** - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

- ☒ **NO** - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:
Outlet is culvert leading to 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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0		4
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	4
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1 Add the points in the boxes above		15

Rating of Site Potential If score is: ☒ 12 - 16 = H ☐ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		1
Source <u>I-5</u>	Yes = 1 No = 0	
Total for D 2 Add the points in the boxes above		3

Rating of Landscape Potential If score is: ☒ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above		1

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 2 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- | | | |
|---|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 3 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- | | | |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 3 |
| 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 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4

Add the points in the boxes above

8**Rating of Site Potential** If score is: ☐ 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 function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 1

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 1

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 1

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 1

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 1

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 1

Total for D 5

Add the points in the boxes above

3**Rating of Landscape Potential** If score is: ☐ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): | | 2 |
| <ul style="list-style-type: none"> Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> <ul style="list-style-type: none"> Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| <input type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 0

Total for D 6

Add the points in the boxes above

2**Rating of Value** If score is: ☐ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|--|----------------------------------|---|
| <input checked="" type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 4 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|----------|
| <input checked="" type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 2 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

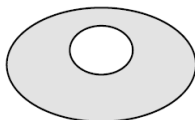
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 2 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



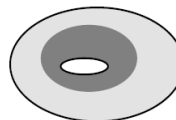
None = 0 points



Low = 1 point

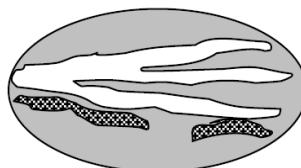


Moderate = 2 points



3

All three diagrams in this row are **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		4
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1		
Add the points in the boxes above		
15		
Rating of Site Potential If Score is: <input checked="" type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 4 % undisturbed habitat + (0 % moderate & low intensity land uses / 2) = 4%		
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 15 % undisturbed habitat + (24 % moderate & low intensity land uses / 2) = 27%		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2		-1
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose <i>only the highest score that applies to the wetland being rated</i>.		
Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		1
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input checked="" type="checkbox"/> 1 = M <input type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

Cowardin Class

- Aquatic Bed (AB)
- Palustrine Emergent (PEM)
- Palustrine Scrub Shrub (PSS)
- Palustrine Forested (PFO)

Wetland W11

Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx










Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

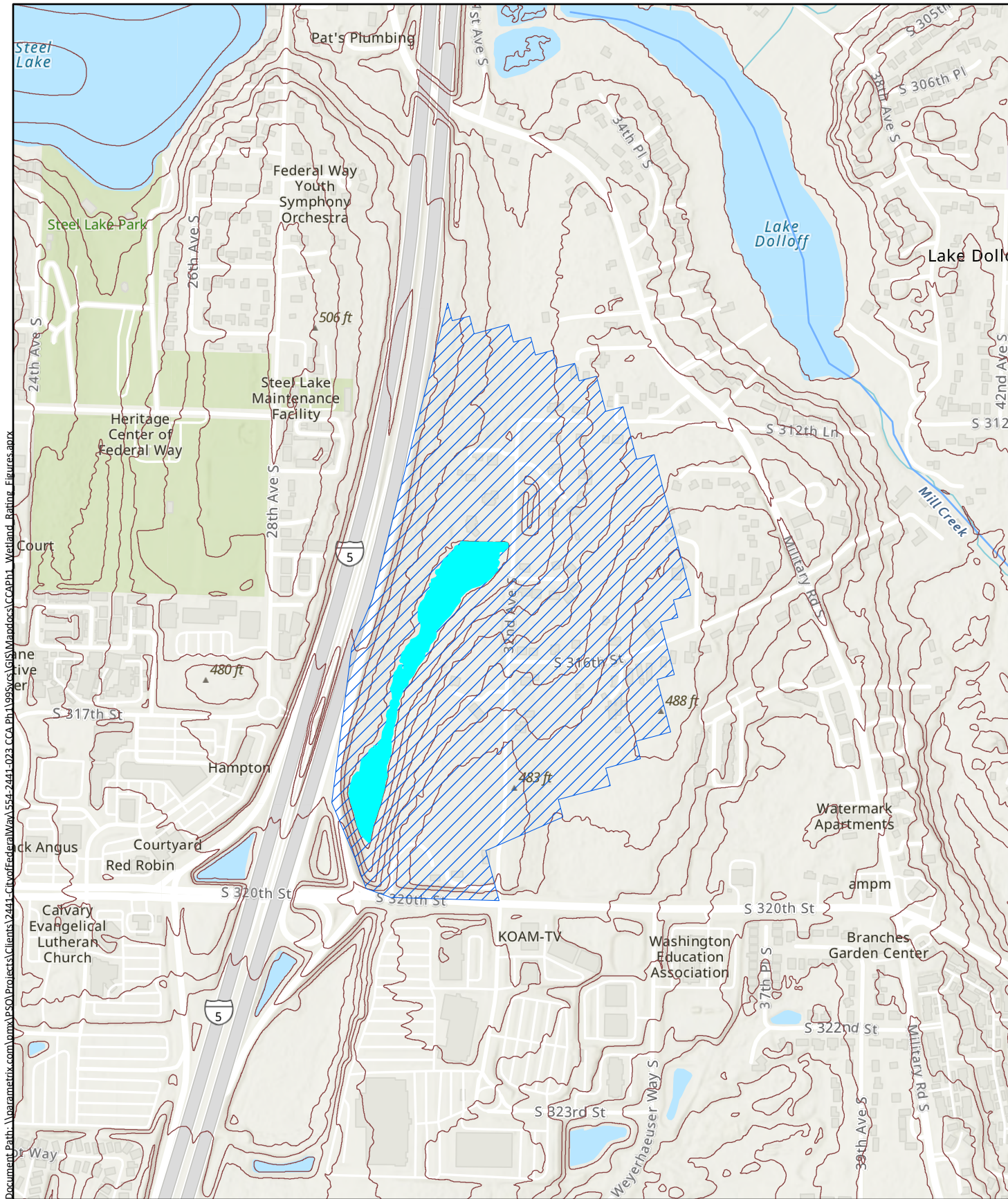
-  Wetland
(Approx. Boundary)
-  150-ft Buffer
-  Stream (Piped)

-  Wetland Outlet
- Hydroperiod**
 -  Saturated only
 -  Seasonally flooded
 -  Permanently flooded

**Wetland W11
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-City of Federal Way\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPH1-Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way, USGS



0 500 1,000
Feet

Wetland (Approx. Boundary)

Contributing Basin

Contours

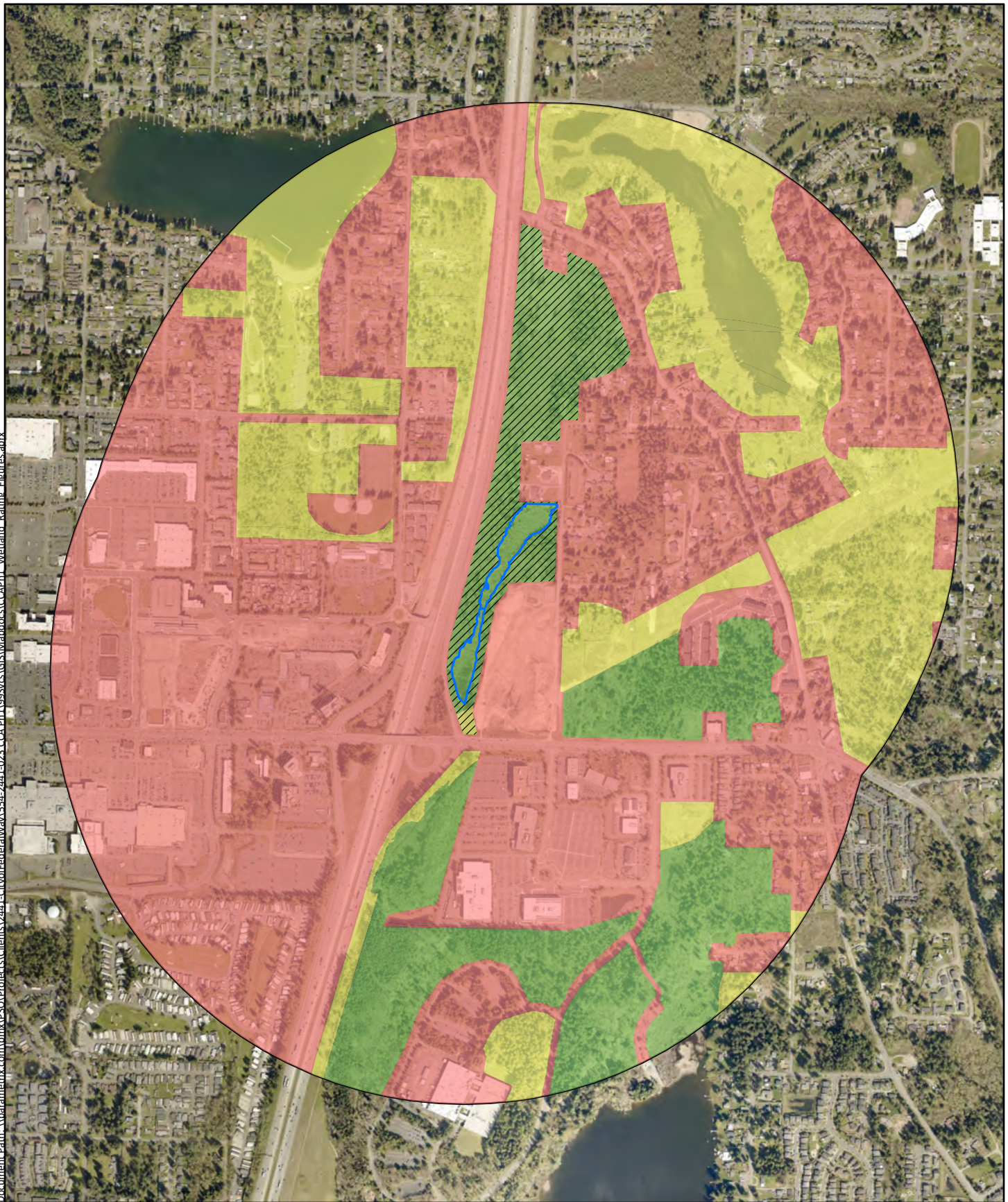
Streams (National
Hydrography Dataset)

**Wetland W11
Contributing Basin**

**Federal Way City Center Access Project
Wetland Rating Forms**

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\srcs\GIS\Mapdocs\CCAPH1 Wetland Rating Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

- Wetland
(Approx. Boundary)
- 1-km Polygon

Accessible Habitat

Land Use

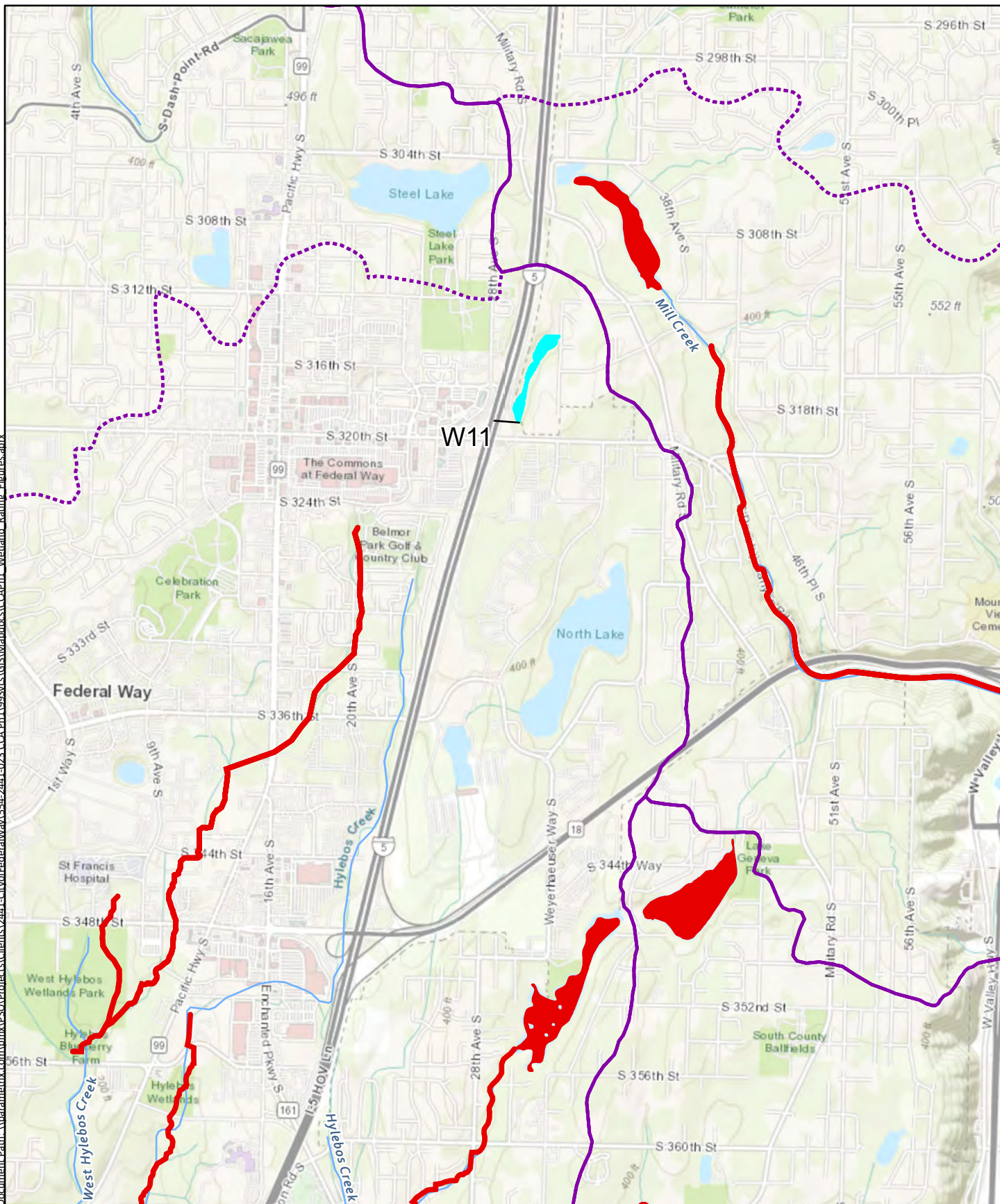
- High
- Low/moderate
- Undisturbed

**Wetland W11
Land Use Intensity**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pm\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\995\srcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way, USGS



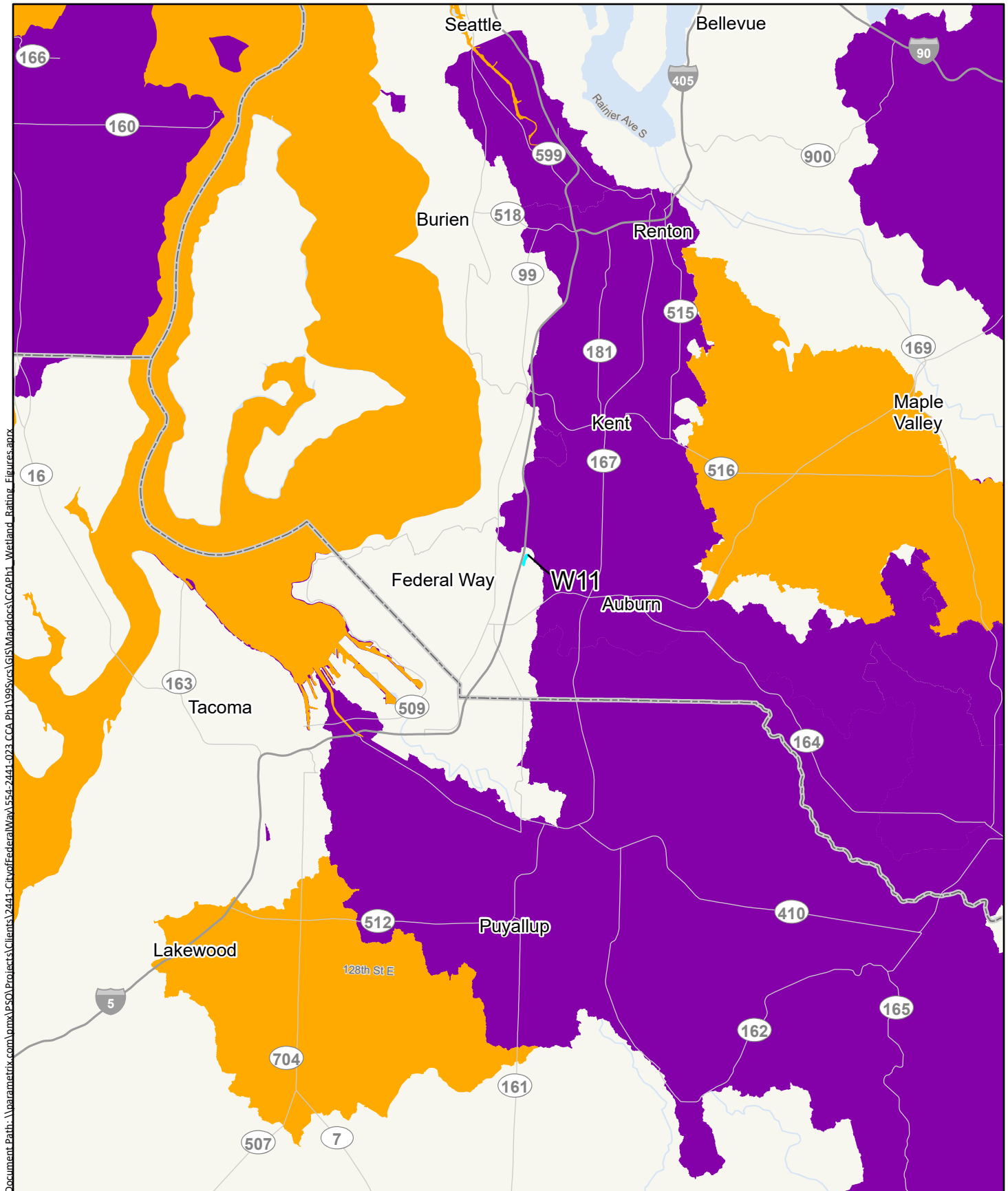
0 0.5 1
Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W11
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

Wetland W11

TMDLs (Total Maximum Daily Loads)

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W12 Date of site visit: 8/19/20,6/11/2Rated by Per Johnson, Anna Hoenig Trained by Ecology? ☒ Yes ☐ No Date of training 2014, 2015HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** IV (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

 Category I - Total score = 23 - 27

 Category II - Total score = 20 - 22

 Category III - Total score = 16 - 19

 X **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	L	
Landscape Potential	M	M	L	
Value	M	H	L	Total
Score Based on Ratings	6	6	3	15

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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ NO - go to 2 ☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ NO - go to 3 ☐ YES - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

- ☒ NO - go to 4 ☐ YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☒ The wetland is on a slope (*slope can be very gradual*),
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☒ The water leaves the wetland **without being impounded**.

- ☐ NO - go to 5 ☒ YES - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

- ☐ NO - go to 6 ☐ YES - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the*

☐ NO - go to 7

☐ YES - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ YES - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

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. Characteristics of the average slope of the wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)

Slope is 1% or less	points = 3	2
Slope is > 1% - 2%	points = 2	
Slope is > 2% - 5%	points = 1	
Slope is greater than 5%	points = 0	

S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions):

Yes = 3 No = 0

0

S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:

Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.*

Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	6
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	

Total for S 1

Add the points in the boxes above

8

Rating of Site Potential If score is: ☐ 12 = H ☒ 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 150 ft on the uphill side of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

1

S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?

Other Sources I-5

Yes = 1 No = 0

1

Total for S 2

Add the points in the boxes above

2

Rating of Landscape Potential If score is: ☒ 1 - 2 = M ☐ 0 = L

Record the rating on the first page

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 = 1 No = 0

0

S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.*

Yes = 1 No = 0

1

S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which the unit is found?*

Yes = 2 No = 0

0

Total for S 3

Add the points in the boxes above

1

Rating of Value If score is: ☐ 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 erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows*

Dense, uncut, **rigid** plants cover > 90% of the area of the wetland

points = 1

All other conditions

points = 0

0

Rating of Site Potential If score is: ☐ 1 = M ☒ 0 = L

Record the rating on the first page

S 5.0. Does the landscape have the potential to support 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 = 1 No = 0

1

Rating of Landscape Potential If score is: ☒ 1 = M ☐ 0 = L

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:

The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)

points = 2

Surface flooding problems are in a sub-basin farther down-gradient

points = 1

No flooding problems anywhere downstream

points = 0

2

S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for S 6

Add the points in the boxes above

2

Rating of Value If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Its outlet is a catchbasin at the southern point.

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0.** Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 0 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 0 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

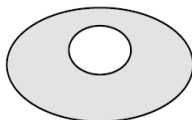
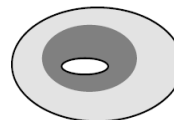
Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 0 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

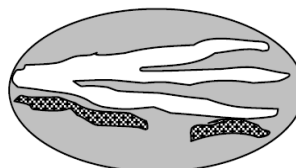
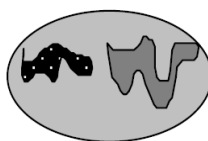
H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*

**None** = 0 points**Low** = 1 point**Moderate** = 2 points

0

All three diagrams
in this row are
HIGH = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		0
<input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)		
<input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland		
<input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)		
<input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)		
<input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by</i>)		
<input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)		
Total for H 1		0
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input checked="" type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 0 % undisturbed habitat + (_____ 0 % moderate & low intensity land uses / 2) = 0%		
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 18 % undisturbed habitat + (_____ 10 % moderate & low intensity land uses / 2) = 23%		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2		-1
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose <i>only the highest score that applies to the wetland being rated</i>.		
Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan		0
Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1		
Site does not meet any of the criteria above points = 0		
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input type="checkbox"/> 1 = M <input checked="" type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

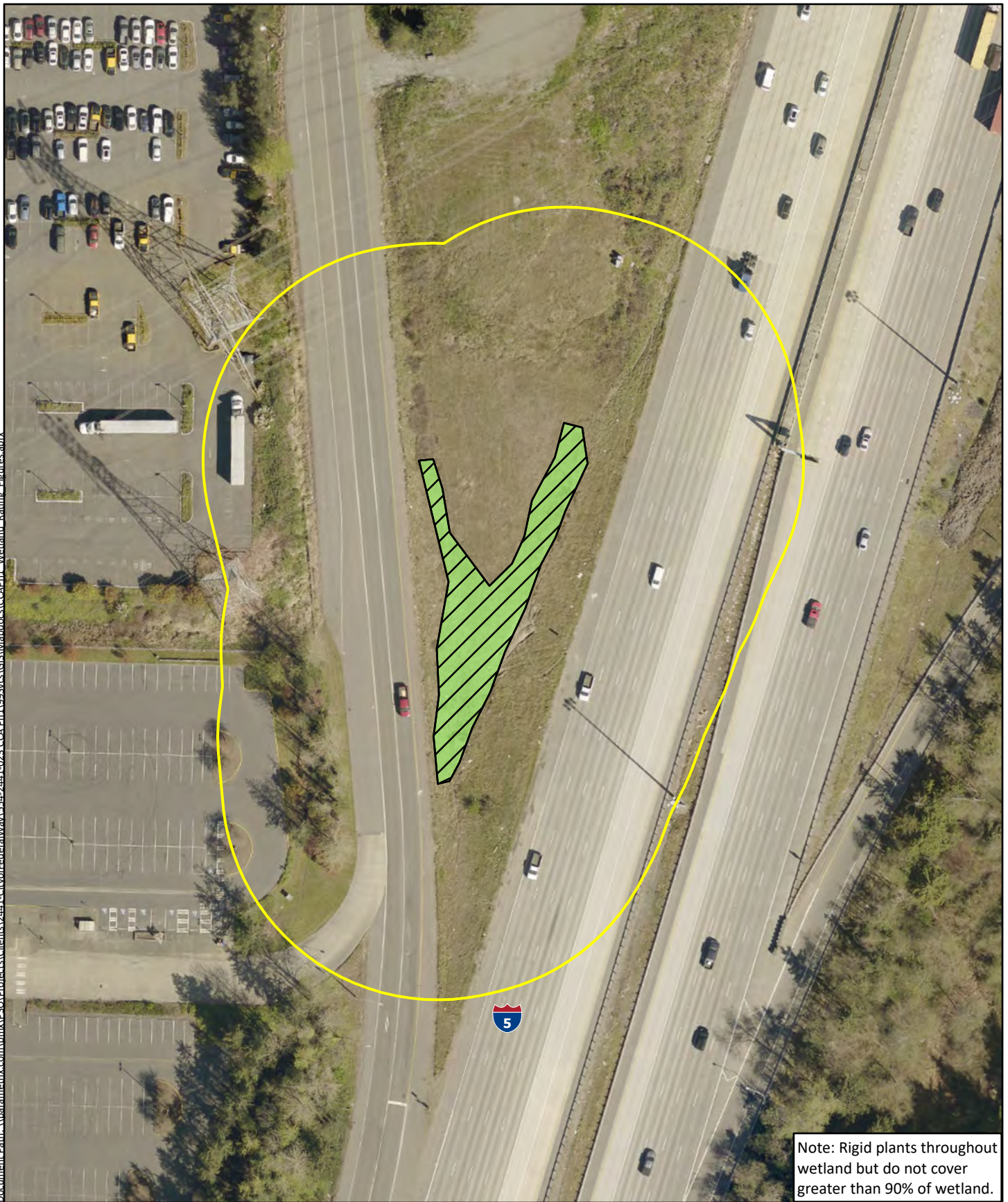
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\parametrix.com\pm\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

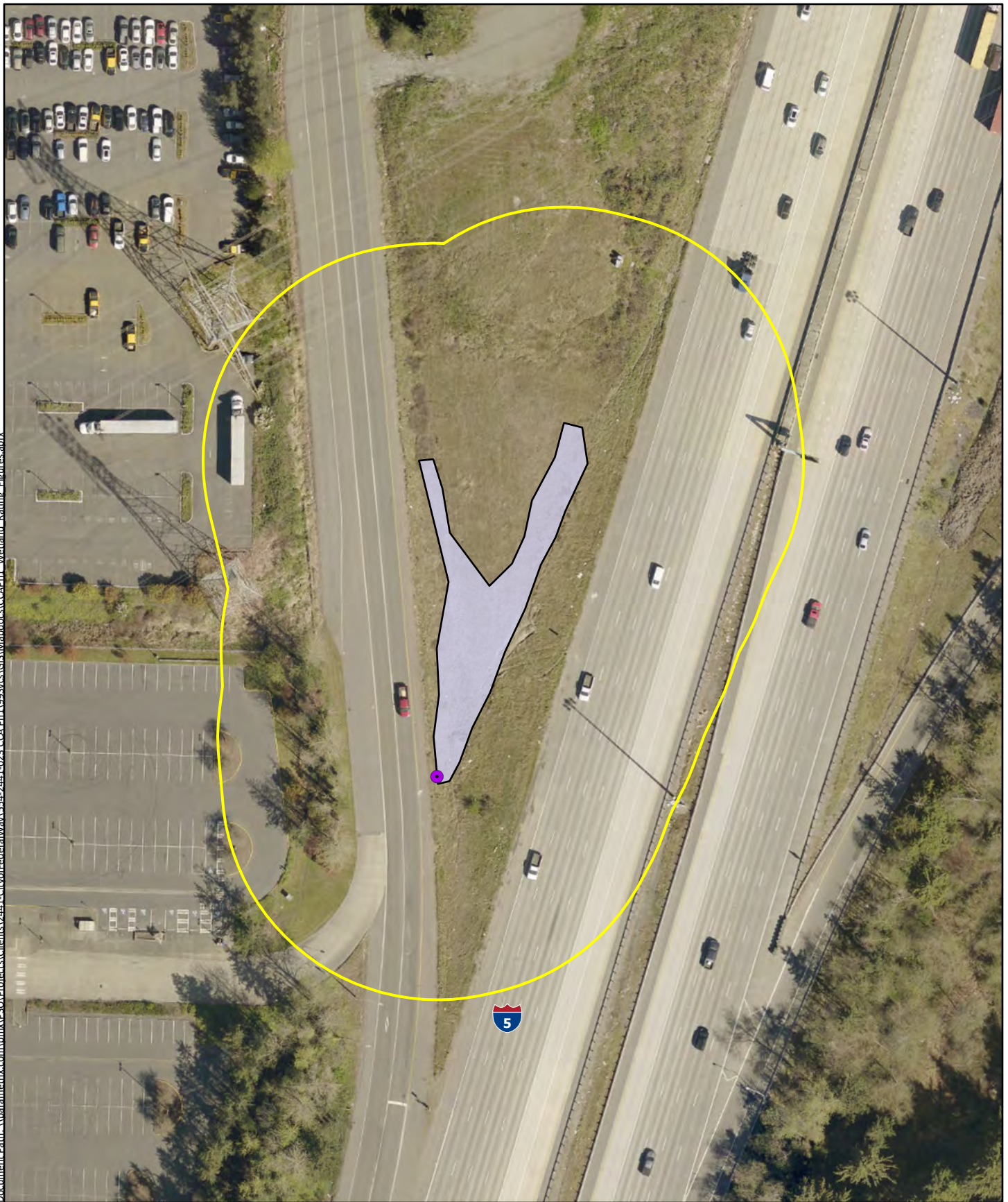
- Dense Plant Cover
- Cowardin Class**
- Palustrine Emergent (PEM)

Wetland W12
Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pm\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\srcs\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

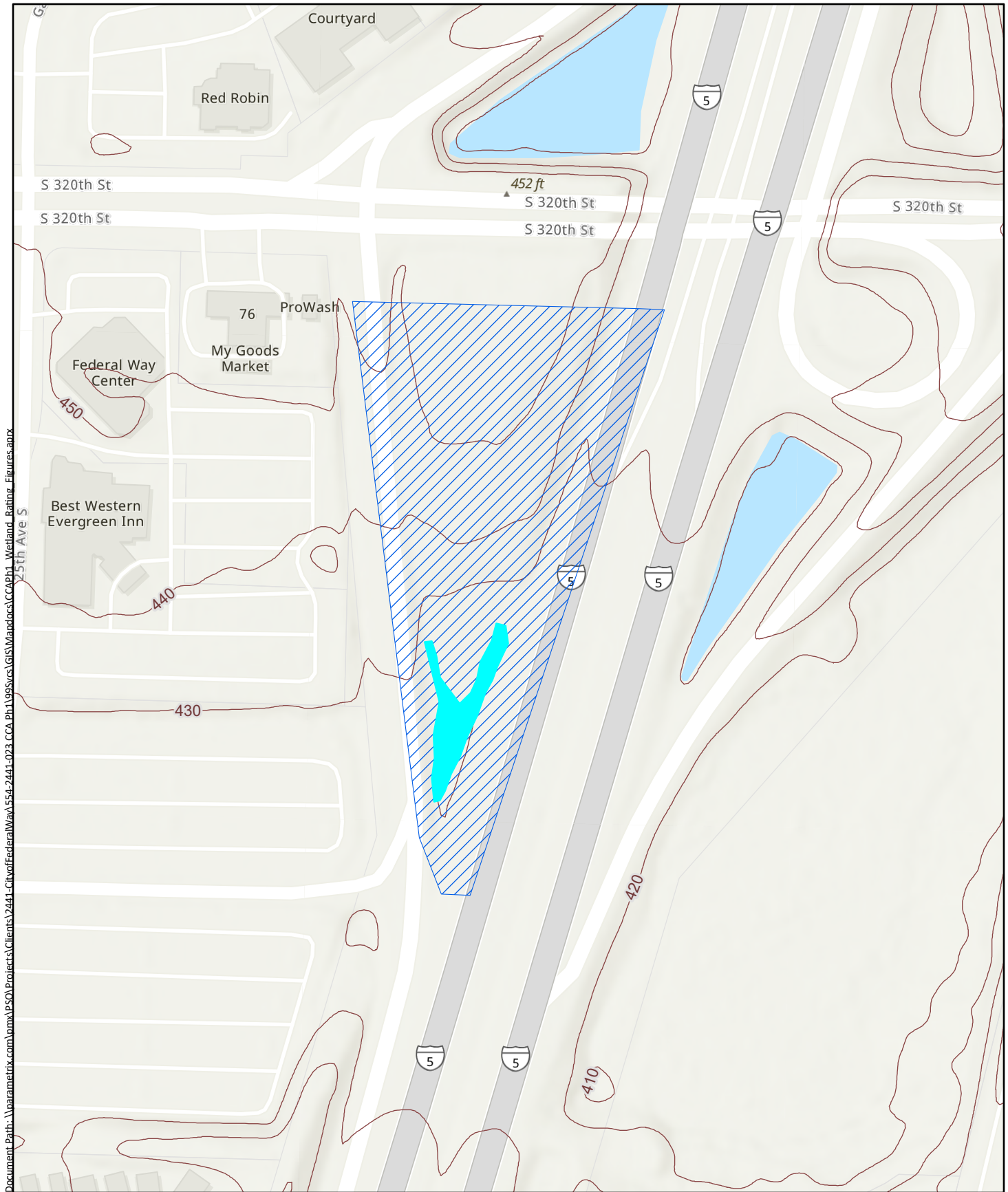
Wetland
(Approx. Boundary)
150-ft Buffer

Wetland Outlet
Hydroperiod
Saturated only

**Wetland W12
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA




Parametrix

Source: King County,
City of Federal Way, USGS



 Wetland (Approx. Boundary)

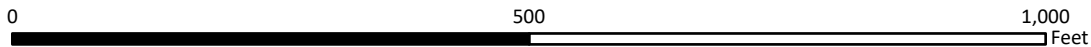
 Contributing Basin

 Contours

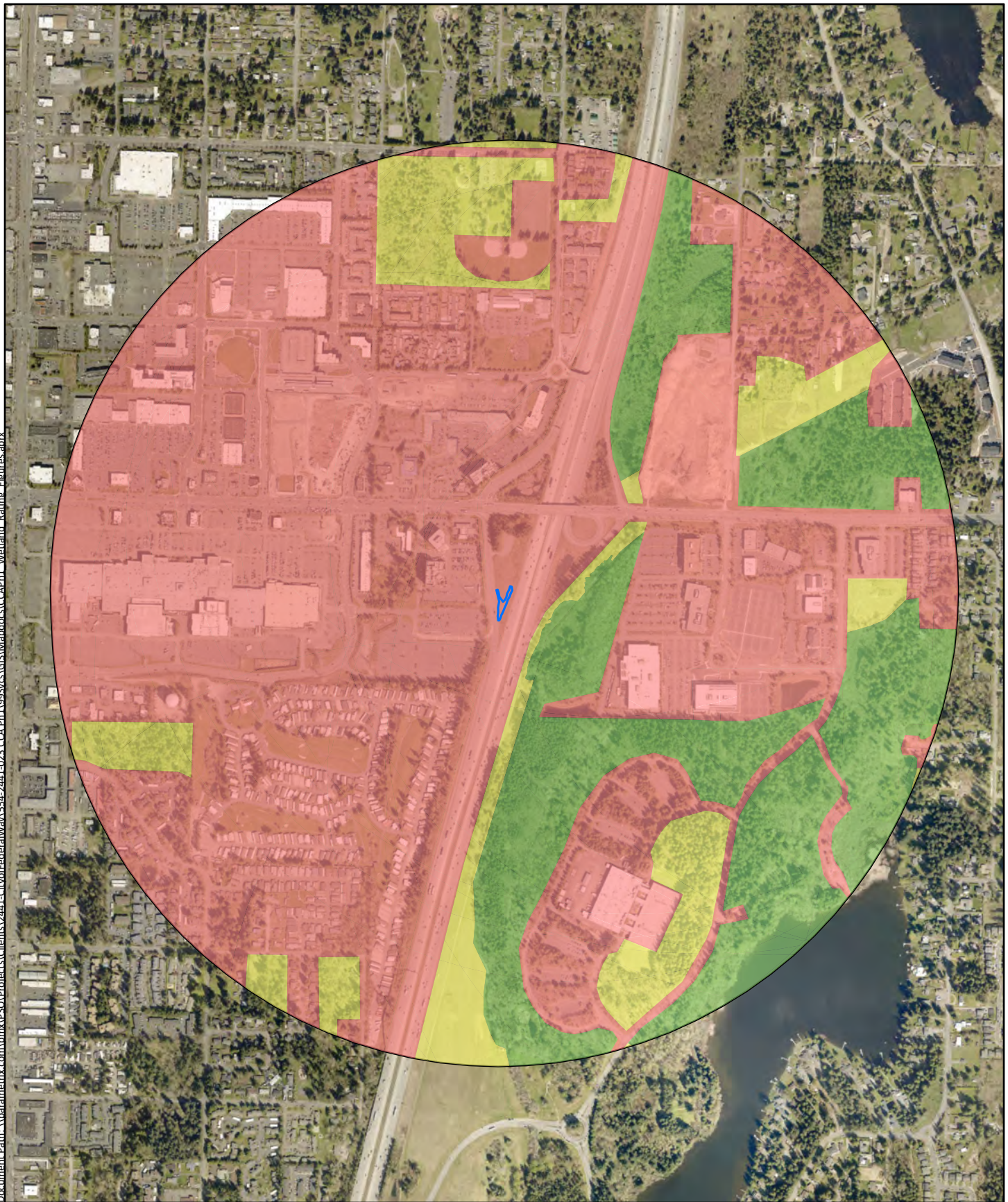
Wetland W12
Contributing Basin

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



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Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

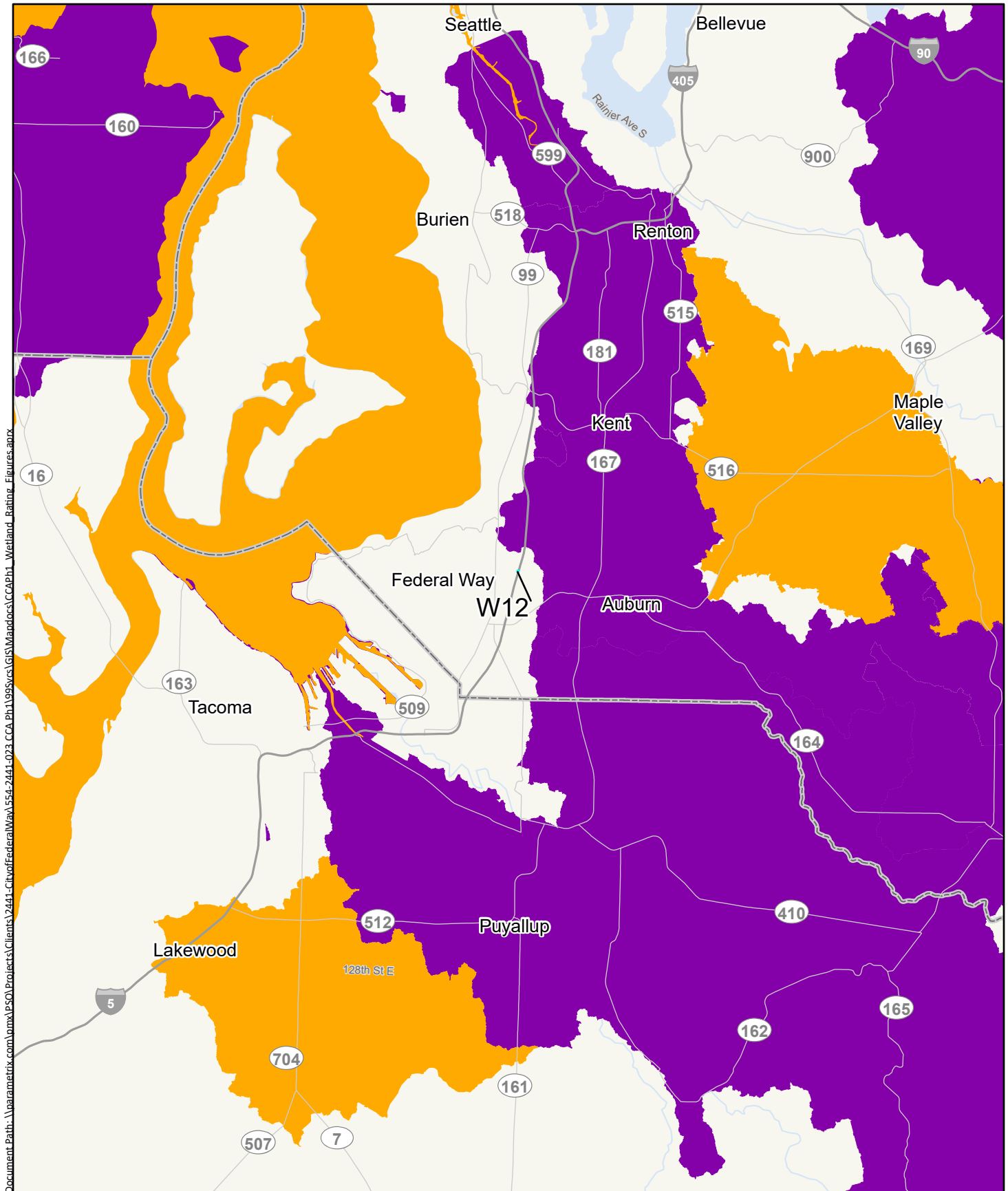
-  Wetland
(Approx. Boundary)
-  1-km Polygon

- Land Use**
-  High
 -  Low/moderate
 -  Undisturbed

Wetland W12
Land Use Intensity

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

Wetland
(Approx. Boundary)
County Boundary

WQ Improvement Projects
Approved
In Development

Wetland W12
TMDLs (Total Maximum Daily Loads)
Federal Way City Center Access Project
Wetland Rating Forms
Federal Way, WA

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W13 Date of site visit: 9/2/2020Rated by Per Johnson, Aaron Thom Trained by Ecology? ☒ Yes ☐ No Date of training 2014, 2018HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** II (based on functions ☒ 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	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	M	
Landscape Potential	H	H	L	
Value	M	H	M	
Score Based on Ratings	7	8	5	Total 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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ NO - go to 2 ☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*
*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ NO - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).
☒ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.
☒ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.
☒ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	3
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0		0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	2
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1 Add the points in the boxes above		10

Rating of Site Potential If score is: ☐ 12 - 16 = H ☒ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		1
Source <u>Trash</u>	Yes = 1 No = 0	
Total for D 2 Add the points in the boxes above		3

Rating of Landscape Potential If score is: ☒ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above		1

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 4 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- | | | |
|---|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 0 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- | | | |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 3 |
| 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 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4

Add the points in the boxes above

7**Rating of Site Potential** If score is: ☐ 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 function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0

1

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?

Yes = 1 No = 0

1

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?

Yes = 1 No = 0

1

Total for D 5

Add the points in the boxes above

3**Rating of Landscape Potential** If score is: ☐ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): | | 2 |
| <ul style="list-style-type: none"> Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> <ul style="list-style-type: none"> Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| <input type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6

Add the points in the boxes above

2**Rating of Value** If score is: ☐ 2 - 4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 2 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

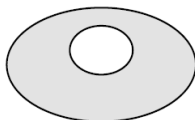
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



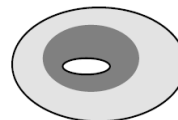
None = 0 points



Low = 1 point

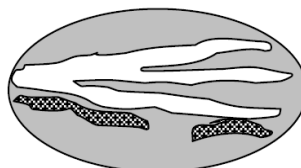
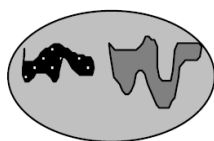


Moderate = 2 points



2

All three diagrams in this row are **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		3
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1		
Add the points in the boxes above		
9		
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input checked="" type="checkbox"/> 7 - 14 = M <input type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 0 % undisturbed habitat + (0 % moderate & low intensity land uses / 2) = 0%		
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 21 % undisturbed habitat + (21 % moderate & low intensity land uses / 2) = 31.5%		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2		-1
Add the points in the boxes above		
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose <i>only the highest score that applies to the wetland being rated</i>.		
Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		1
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input checked="" type="checkbox"/> 1 = M <input type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\Parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

Cowardin Class

- Palustrine Emergent (PEM)
- Palustrine Scrub Shrub (PSS)
- Palustrine Forested (PFO)

Wetland W13

Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Weyerhaeuser Way S

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Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

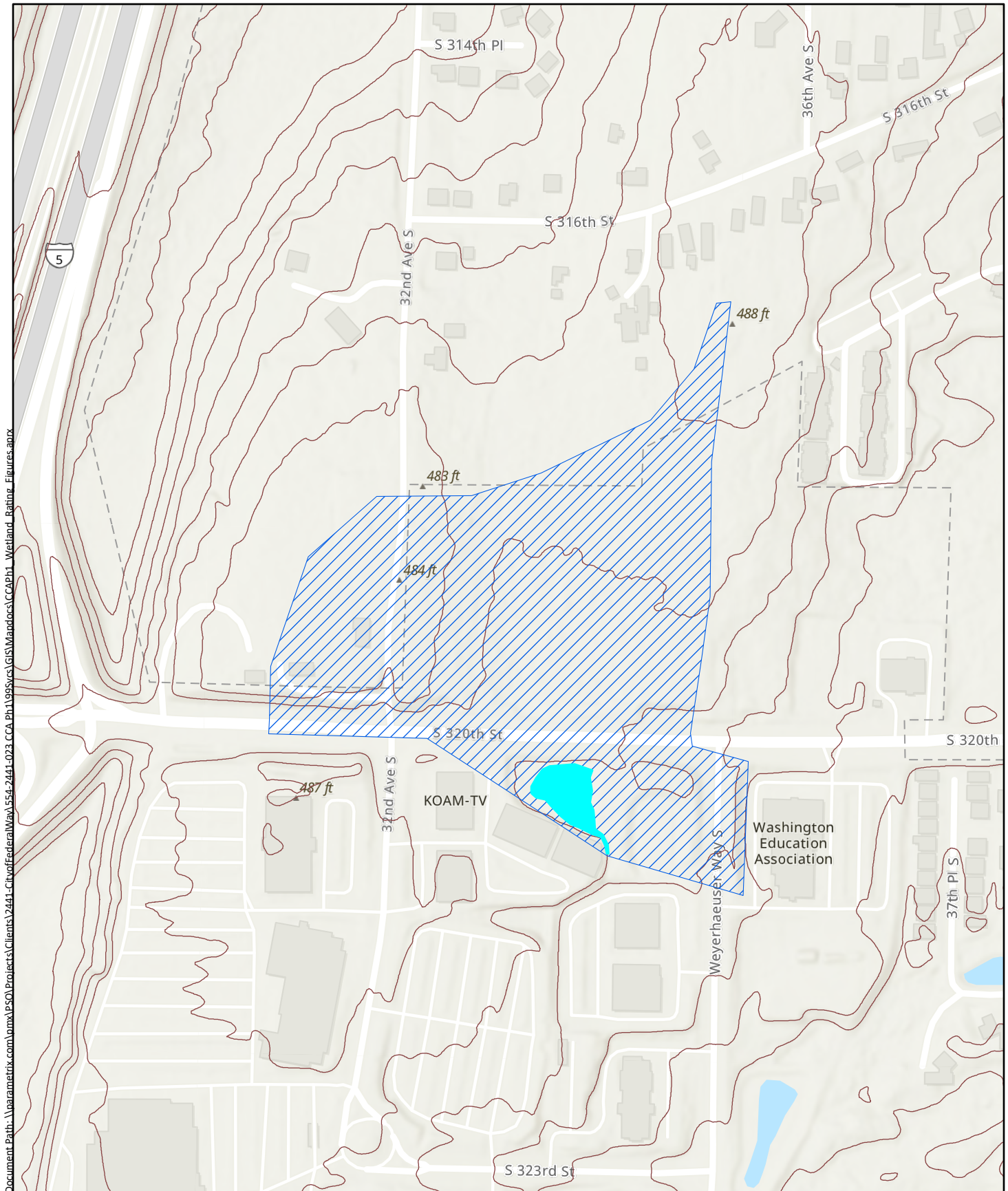
- Hydroperiod**
- Saturated only
 - Occasionally flooded

**Wetland W13
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Weyerhaeuser Way S



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Parametrix

Source: King County,
City of Federal Way, USGS



Wetland (Approx. Boundary)

Contributing Basin

Contours

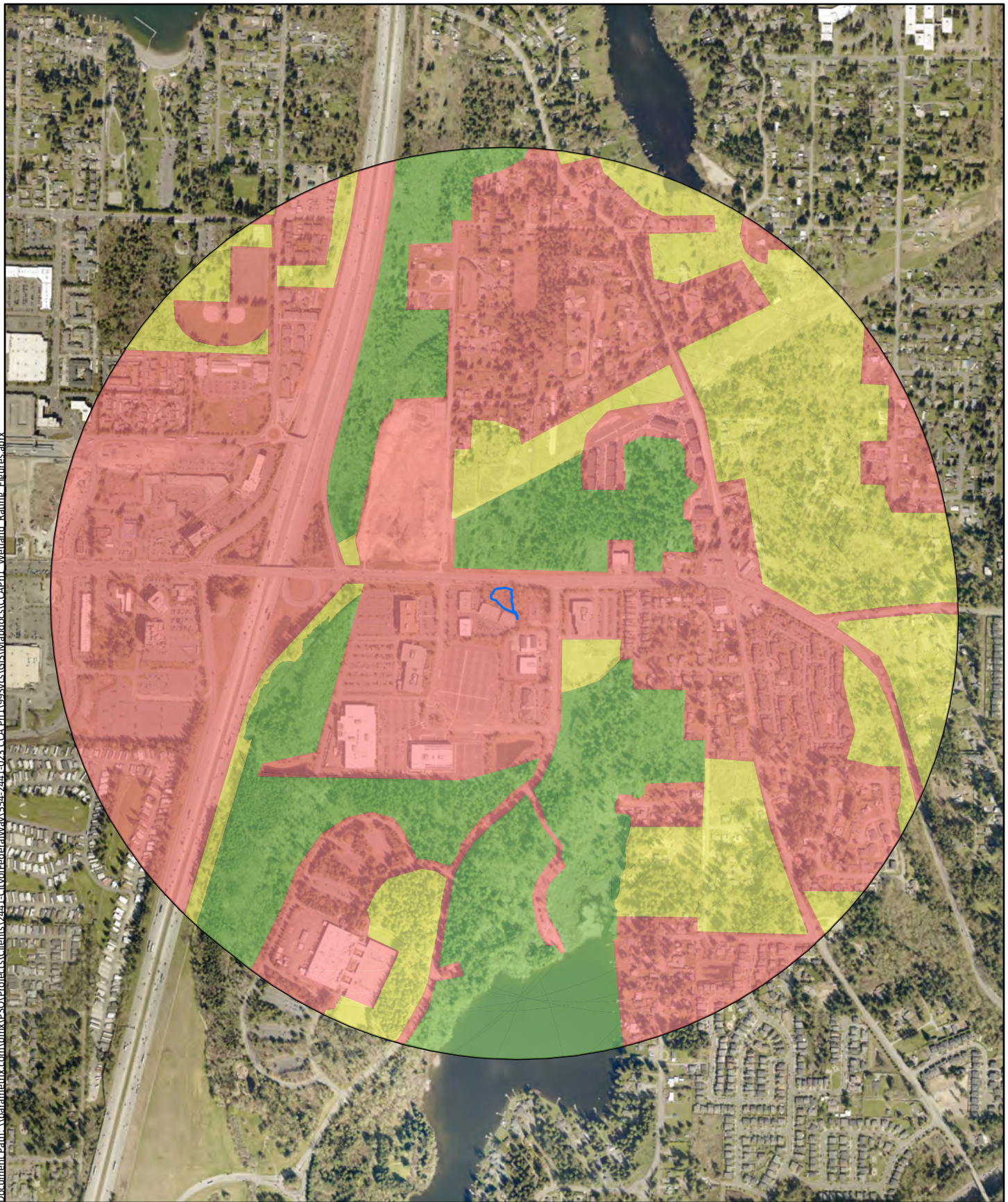
0 500 1,000 Feet

Wetland W13
Contributing Basin

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1 Wetland Rating Figures.aprx





Parametrix




Source: King County,
City of Federal Way



0 500 1,000
Feet

-  Wetland
(Approx. Boundary)
-  1-km Polygon

Land Use

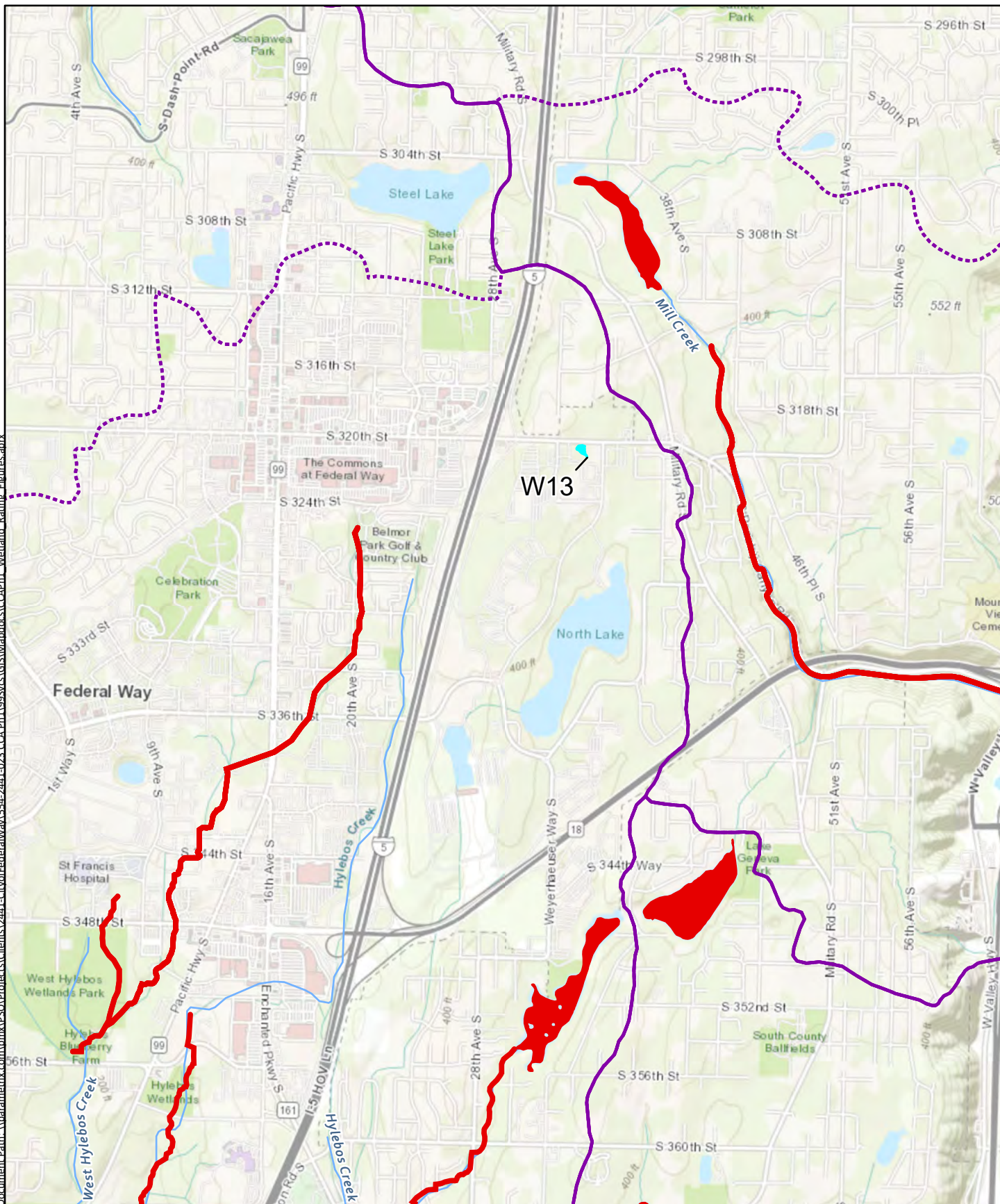
-  High
-  Low/moderate
-  Undisturbed

Wetland W13
Land Use Intensity

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way, USGS



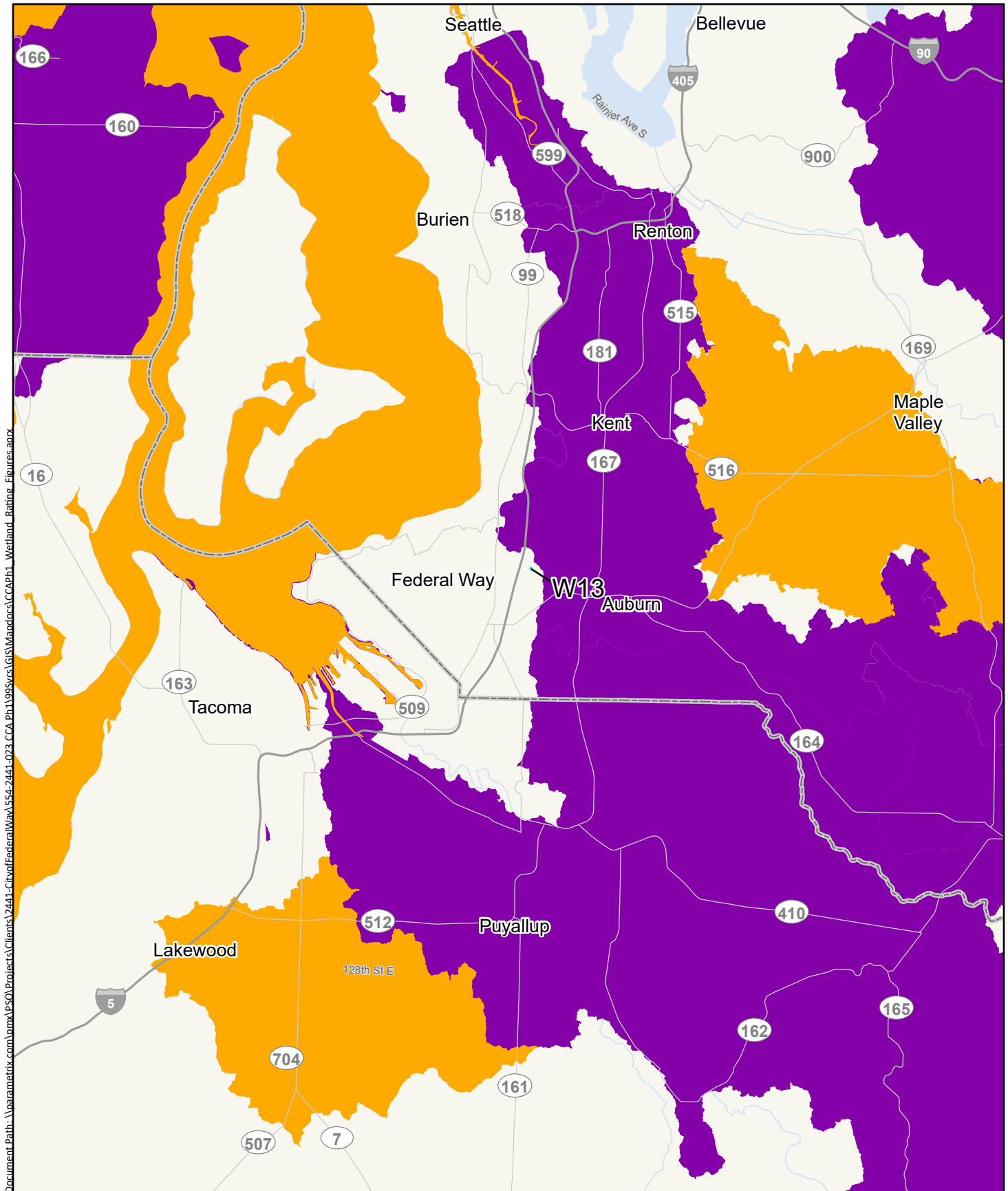
0 0.5 1 Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W13
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

**Wetland W13
TMDLs (Total Maximum Daily Loads)**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W14 Date of site visit: 9/2/2020Rated by Per Johnson, Aaron Thom Trained by Ecology? ☒ Yes ☐ No Date of training 2014, 2018HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

☐ **Category I** - Total score = 23 - 27
☐ **Category II** - Total score = 20 - 22
☒ **Category III** - Total score = 16 - 19
☐ **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	M	
Landscape Potential	M	H	L	
Value	M	H	M	
Score Based on Ratings	6	7	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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ **NO** - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*
*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ **NO** - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

- ☒ **NO** - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.

- ☒ **NO** - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

- ☒ **NO** - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

Culvert under 320th (mapped but not observed). No right of entry.

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. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).		0
Yes = 4 No = 0		
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	0
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1		7
Add the points in the boxes above		

Rating of Site Potential If score is: ☐ 12 - 16 = H ☒ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		0
Source	Yes = 1 No = 0	
Total for D 2		2
Add the points in the boxes above		

Rating of Landscape Potential If score is: ☐ 3 or 4 = H ☒ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3		1
Add the points in the boxes above		

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 2 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- | | | |
|---|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 0 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- | | | |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 3 |
| 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 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4 Add the points in the boxes above **5****Rating of Site Potential** If score is: ☐ 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 function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 1

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 1

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 1

Total for D 5 Add the points in the boxes above **3****Rating of Landscape Potential** If score is: ☒ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): | | 2 |
| <ul style="list-style-type: none"> Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> <ul style="list-style-type: none"> Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| <input type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 0

Total for D 6 Add the points in the boxes above **2****Rating of Value** If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 1 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|---|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| | | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

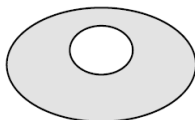
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



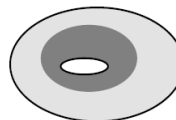
None = 0 points



Low = 1 point

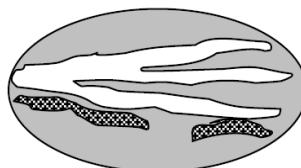
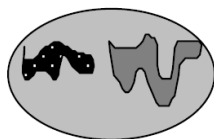


Moderate = 2 points



1

All three diagrams in this row are **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		3
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1		
Add the points in the boxes above		
7		
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input checked="" type="checkbox"/> 7 - 14 = M <input type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 3 % undisturbed habitat + (_____ 2 % moderate & low intensity land uses / 2) = 4%		
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 17 % undisturbed habitat + (_____ 27 % moderate & low intensity land uses / 2) = 30.5%		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2		
Add the points in the boxes above		-1
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose <i>only the highest score that applies to the wetland being rated</i>.		
Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		1
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input checked="" type="checkbox"/> 1 = M <input type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

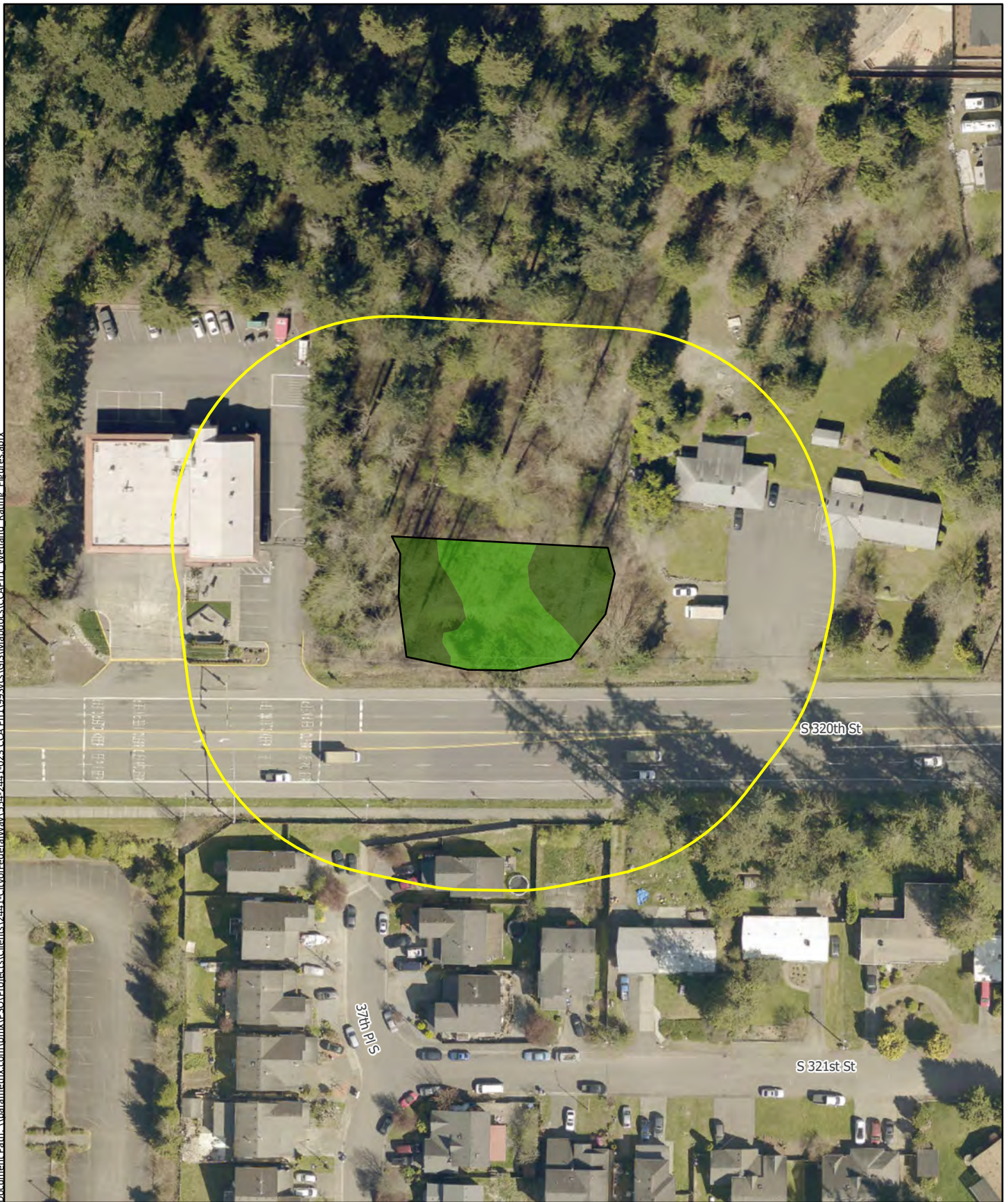
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	



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Parametrix

Source: King County,
City of Federal Way



-  Wetland
(Approx. Boundary)
-  150-ft Buffer

Cowardin Class

-  Palustrine Scrub Shrub (PSS)
-  Palustrine Forested (PFO)

Wetland W14

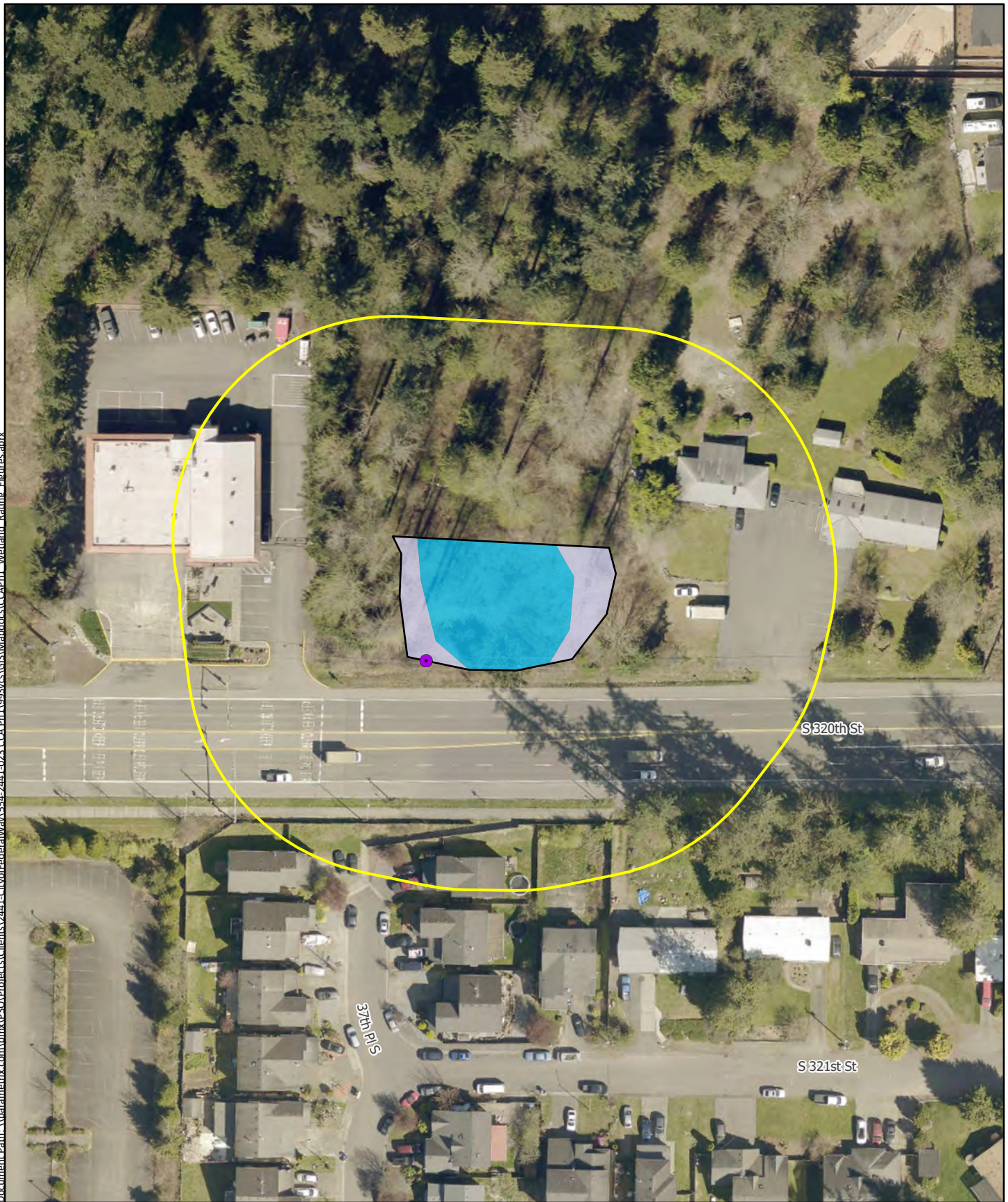
Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

0 50 100
Feet

Document Path: \\parametrix.com\pm\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPH1_Wetland_Rating_Figures.aprx








Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

-  Wetland
(Approx. Boundary)
-  150-ft Buffer

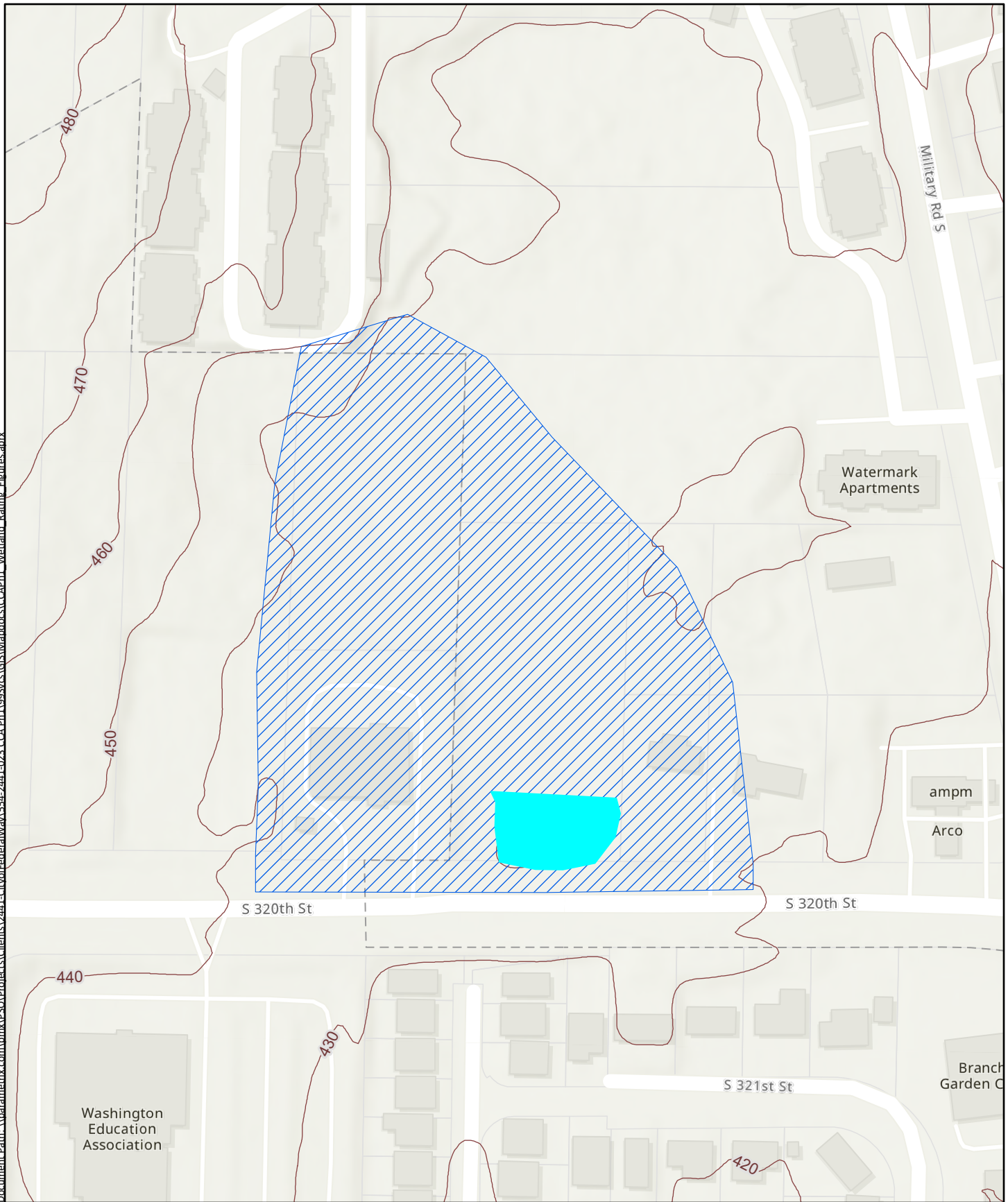
-  Wetland Outlet
- Hydroperiod**
 -  Saturated only
 -  Occasionally flooded

Wetland W14
Hydroperiods

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph1\995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx




Parametrix

Source: King County,
City of Federal Way, USGS



 Wetland (Approx. Boundary)

 Contributing Basin

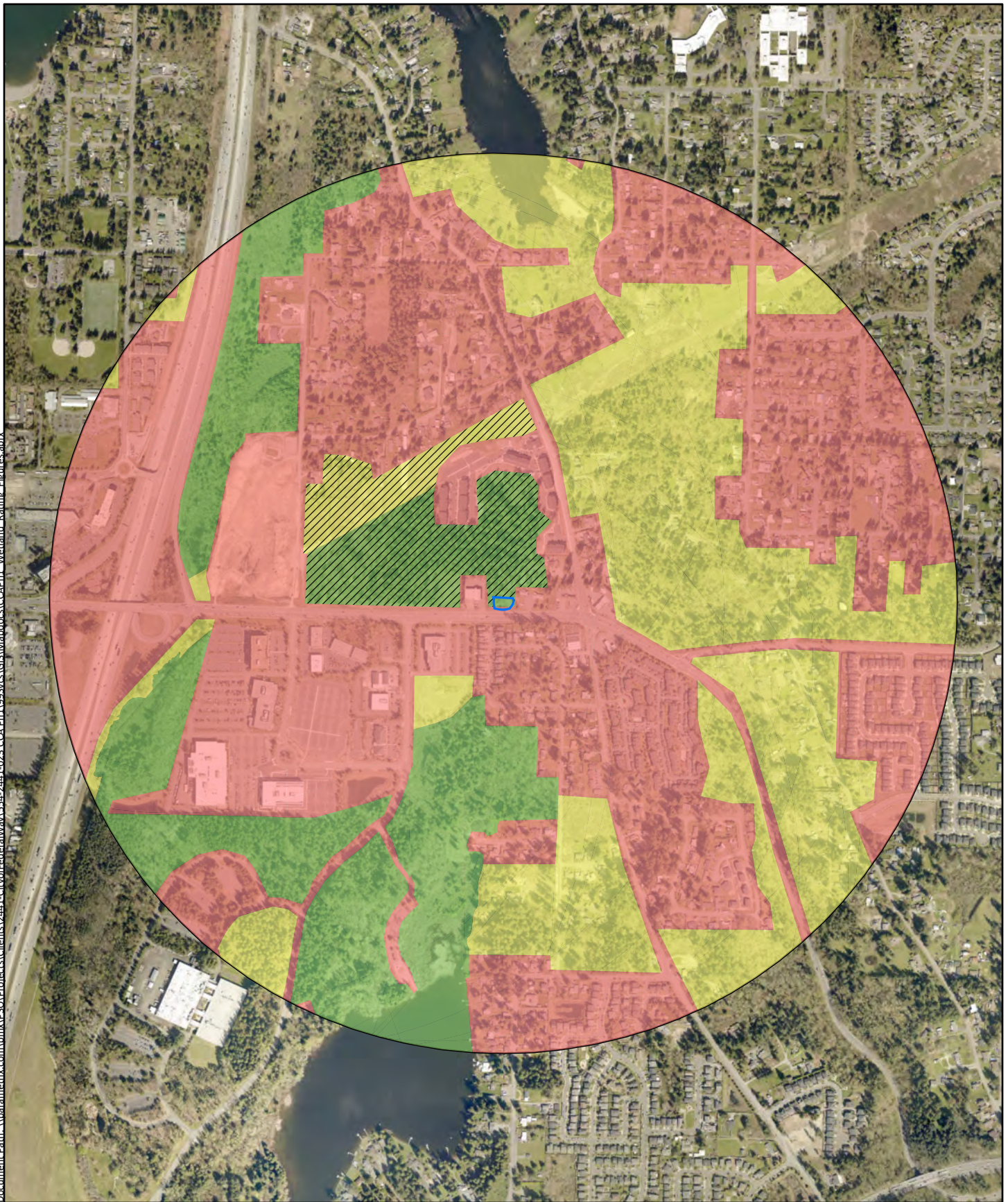
 Contours

**Wetland W14
Contributing Basin**

Federal Way City Center Access Project
Wetland Rating Forms

0 500 1,000 Feet Federal Way, WA

Document Path: \\parametrix.com\pmx\PSQ\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph11995vcs\GIS\Mapdocs\CCAPh1 Wetland Rating Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

- Wetland
(Approx. Boundary)
- 1-km Polygon

Accessible Habitat

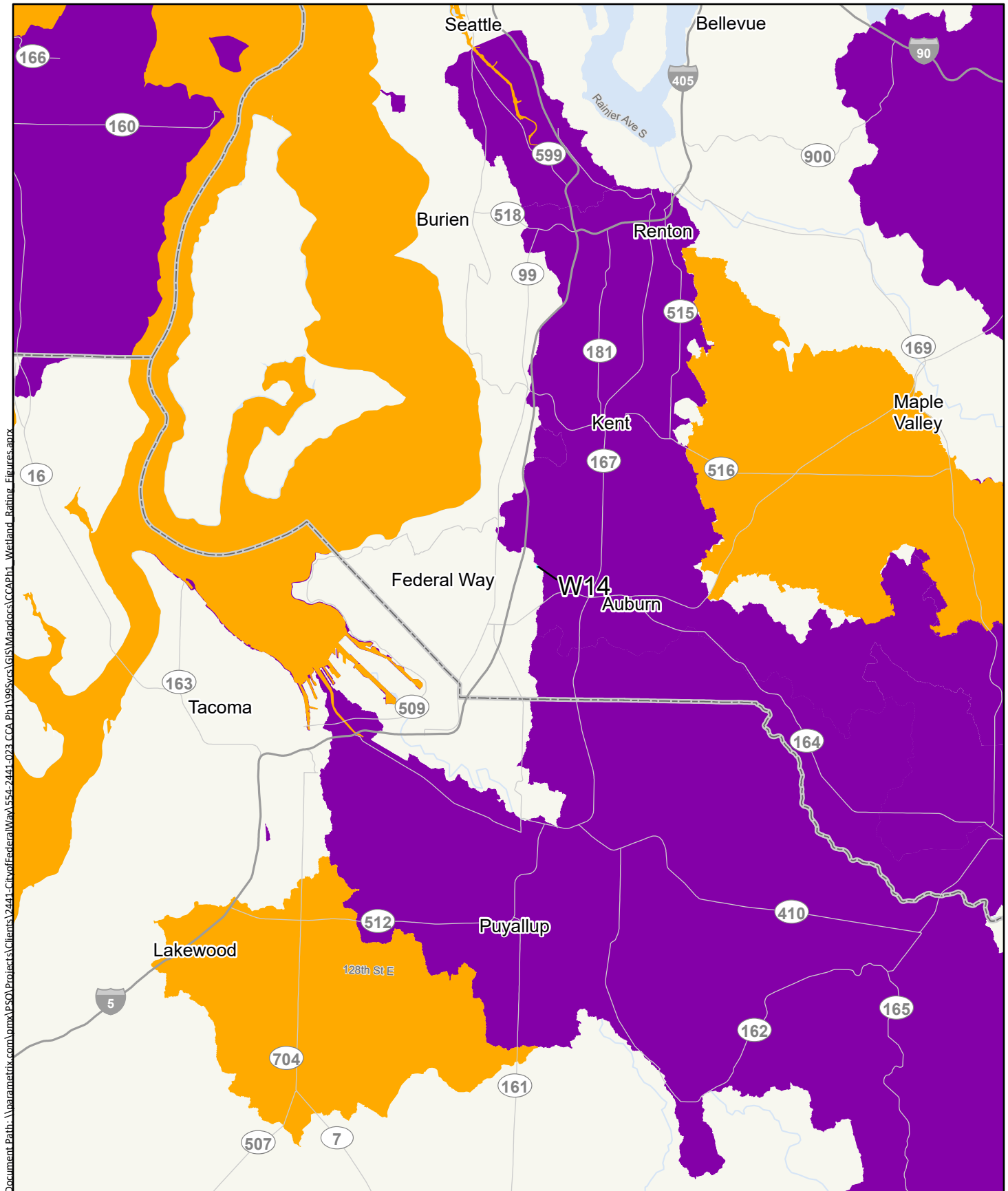
Land Use

- High
- Low/moderate
- Undisturbed

Wetland W14
Land Use Intensity

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pm\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

Wetland
(Approx. Boundary)
County Boundary

WQ Improvement Projects
Approved
In Development

Wetland W14
TMDLs (Total Maximum Daily Loads)
Federal Way City Center Access Project
Wetland Rating Forms
Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W17 Date of site visit: 1/7/2021Rated by Josh Wozniak Trained by Ecology? ☒ Yes ☐ No Date of training Jul-05HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

☐ **Category I** - Total score = 23 - 27
☐ **Category II** - Total score = 20 - 22
☒ **Category III** - Total score = 16 - 19
☐ **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	L	
Landscape Potential	M	M	L	
Value	M	H	M	
Score Based on Ratings	6	7	4	17

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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ NO - go to 2 ☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*
*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ NO - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

- ☒ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.

- ☒ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

- ☒ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	3
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0		0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	3
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	4
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1 Add the points in the boxes above		10

Rating of Site Potential If score is: ☐ 12 - 16 = H ☒ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		0
Source	Yes = 1 No = 0	
Total for D 2 Add the points in the boxes above		1

Rating of Landscape Potential If score is: ☐ 3 or 4 = H ☒ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above		1

Rating of Value If score is: ☐ 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 degradation**D 4.0. Does the site have the potential to reduce flooding and erosion?****D 4.1. Characteristics of surface water outflows from the wetland:**

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 4 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- | | | |
|--|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 3 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- | | | |
|---|------------|---|
| <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 3 |
| 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 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4 Add the points in the boxes above **10****Rating of Site Potential** If score is: ☐ 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 function of the site?****D 5.1. Does the wetland unit receive stormwater discharges?** Yes = 1 No = 0 **1****D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?** Yes = 1 No = 0 **1****D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?** Yes = 1 No = 0 **0****Total for D 5** Add the points in the boxes above **2****Rating of Landscape Potential** If score is: ☐ 3 = H ☒ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.**

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): | | 2 |
| <input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| <input type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 **0****Total for D 6** Add the points in the boxes above **2****Rating of Value** If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|--|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 1 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

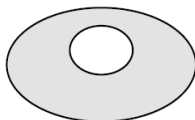
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 0 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



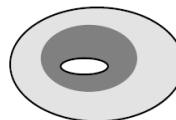
None = 0 points



Low = 1 point

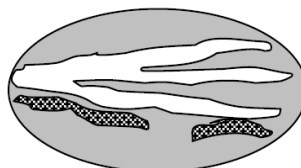


Moderate = 2 points



0

All three diagrams in this row are **HIGH** = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		2
<input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
Total for H 1		
Add the points in the boxes above		
4		
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input checked="" type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 12 % undisturbed habitat + (6 % moderate & low intensity land uses / 2) = 15%		
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		1
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 25 % undisturbed habitat + (18 % moderate & low intensity land uses / 2) = 34%		
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2		
Add the points in the boxes above		0
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose <i>only the highest score that applies to the wetland being rated</i>.		
Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		1
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input checked="" type="checkbox"/> 1 = M <input type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

Cowardin Class
Palustrine Forested (PFO)

Wetland W17
Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx







Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

-  Wetland
(Approx. Boundary)
-  150-ft Buffer

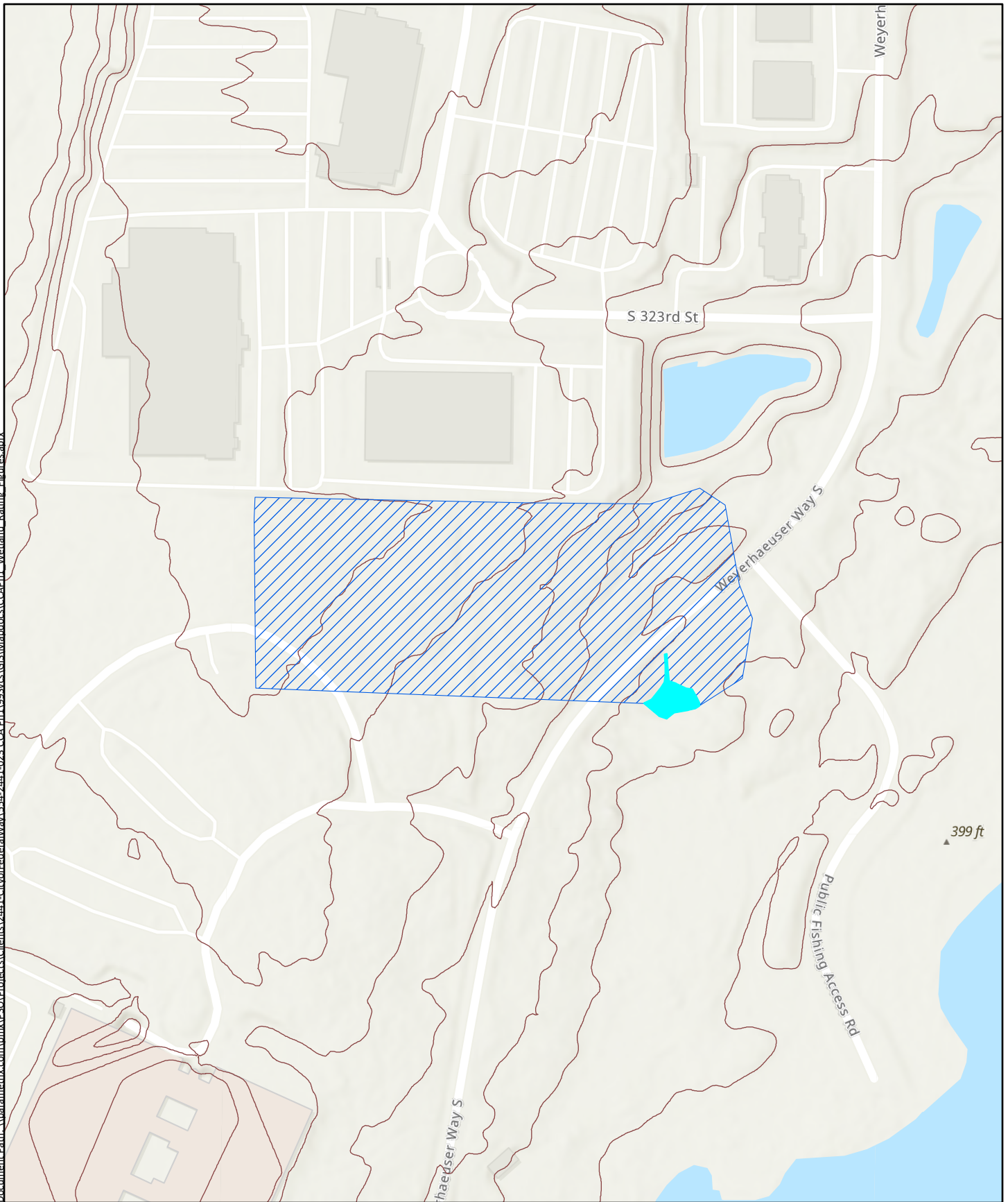
- Hydroperiod**
-  Saturated only
 -  Seasonally flooded

**Wetland W17
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way, USGS



 Wetland (Approx. Boundary)

 Contributing Basin

 Contours

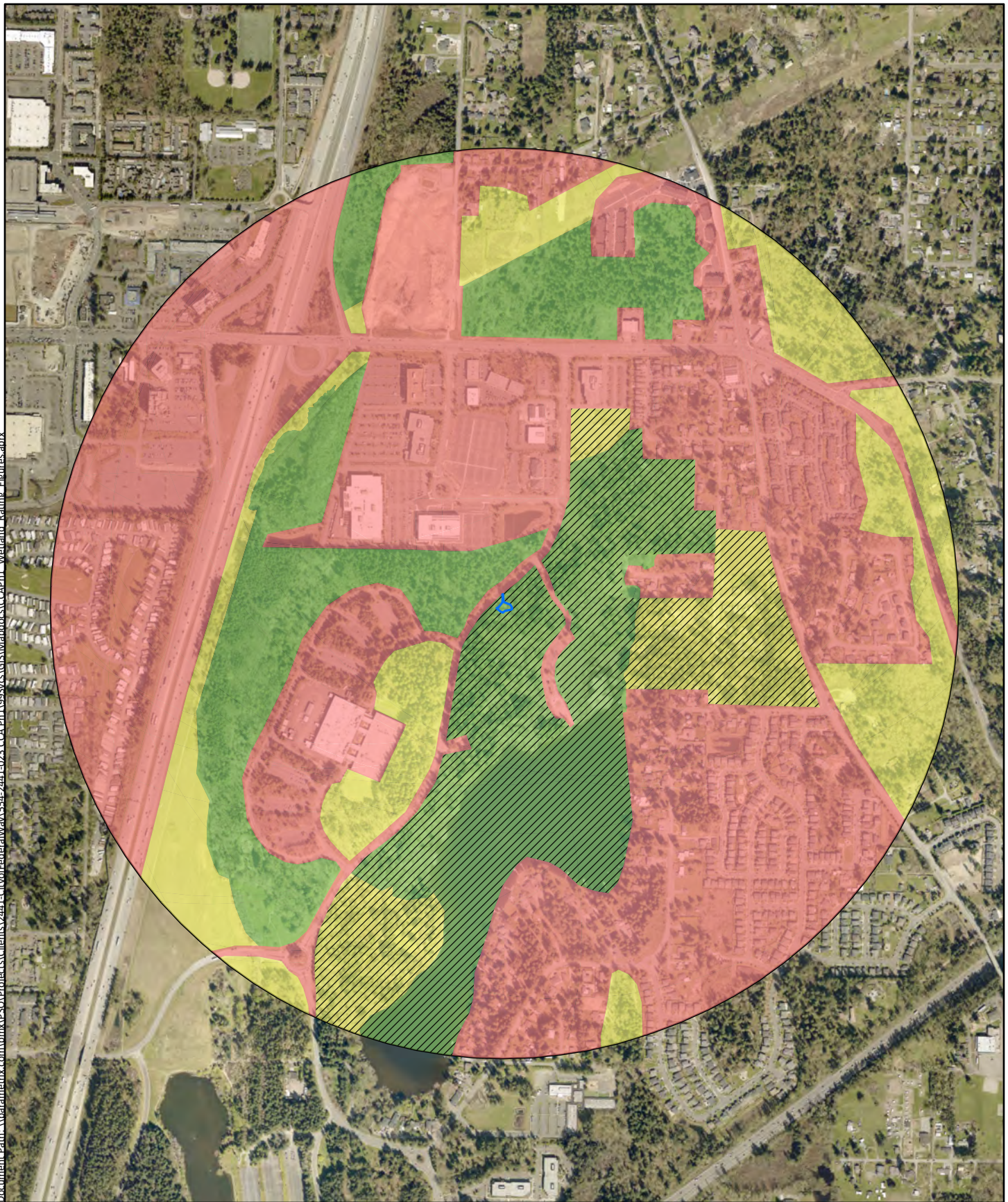
0 500 1,000
Feet

Wetland W17
Contributing Basin

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

- Wetland
(Approx. Boundary)
- 1-km Polygon

Accessible Habitat

Land Use

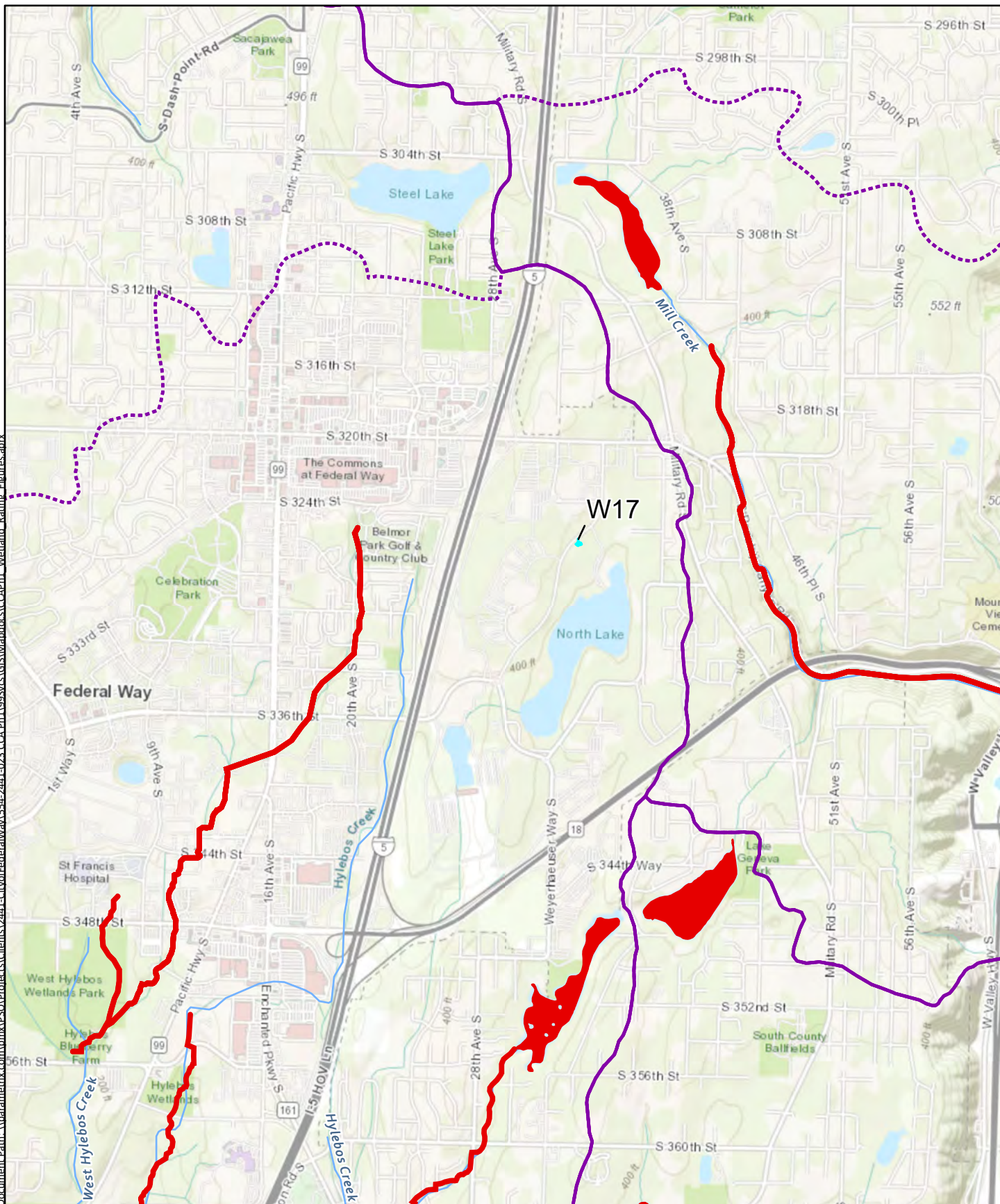
- High
- Low/moderate
- Undisturbed

**Wetland W17
Land Use Intensity**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way, USGS



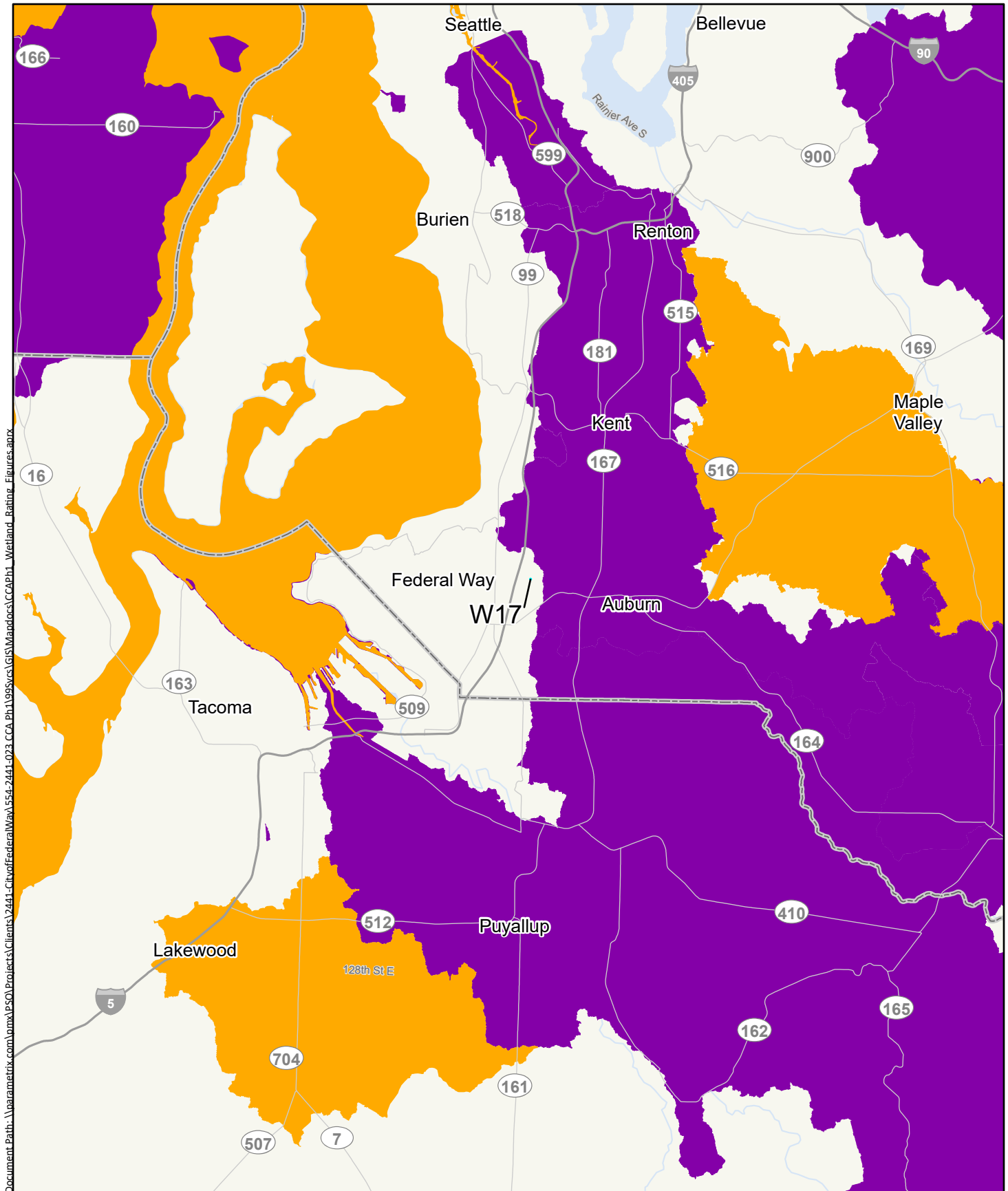
0 0.5 1
Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W17
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

Wetland
(Approx. Boundary)
County Boundary

WQ Improvement Projects
Approved
In Development

Wetland W17
TMDLs (Total Maximum Daily Loads)
Federal Way City Center Access Project
Wetland Rating Forms
Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W18 Date of site visit: 1/7/2021Rated by Josh Wozniak Trained by Ecology? ☒ Yes ☐ No Date of training Jun-14HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☐ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** II (based on functions ☒ 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	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	H	
Landscape Potential	H	H	L	
Value	M	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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ **NO** - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*
*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ **NO** - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).
☐ **NO** - go to 4 ☒ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.
☒ **NO** - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.
☒ **NO** - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☒ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

Wetland has both depressional and lake fringe HGM classes, therefore rated as depressional

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. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).		0
Yes = 4 No = 0		
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	2
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1		9
Add the points in the boxes above		

Rating of Site Potential If score is: ☐ 12 - 16 = H ☒ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		1
Source <u>Waterfowl</u>	Yes = 1 No = 0	
Total for D 2		3
Add the points in the boxes above		

Rating of Landscape Potential If score is: ☒ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3		1
Add the points in the boxes above		

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
<input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	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	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4		10

Add the points in the boxes above

Rating of Site Potential If score is: ☐ 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 function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5		3

Add the points in the boxes above

Rating of Landscape Potential If score is: ☒ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		2
<input checked="" type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
<input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why	points = 0	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 No = 0	0
Total for D 6		2

Add the points in the boxes above

Rating of Value If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page

These questions apply to wetlands of all HGM classes.**HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0.** Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|--|----------------------------------|---|
| <input checked="" type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 4 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|---|
| <input checked="" type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 2 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input checked="" type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

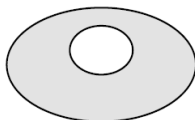
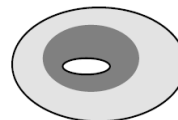
Count the number of plant species in the wetland that cover at least 10 ft².

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 1 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

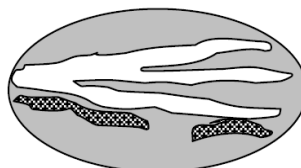
H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*

**None** = 0 points**Low** = 1 point**Moderate** = 2 points

3

All three diagrams
in this row are
HIGH = 3 points



<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata) 		5
<p>Total for H 1</p>		<p>Add the points in the boxes above</p> <p>15</p>

Rating of Site Potential If Score is: ☒ 15 - 18 = H ☐ 7 - 14 = M ☐ 0 - 6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: <div> <div>7</div> <div>% undisturbed habitat</div> <div>+</div> <div>(</div> <div> <div>4</div> <div>% moderate & low intensity land uses / 2</div> <div>)</div> <div>=</div> <div>9</div> <div>%</div> </div> <div> <div>If total accessible habitat is:</div> <div>> 1/3 (33.3%) of 1 km Polygon</div> <div>20 - 33% of 1 km Polygon</div> <div>10 - 19% of 1 km Polygon</div> <div>< 10 % of 1 km Polygon</div> </div> <div> <div>points = 3</div> <div>points = 2</div> <div>points = 1</div> <div>points = 0</div> </div> </div>		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: <div> <div>17</div> <div>% undisturbed habitat</div> <div>+</div> <div>(</div> <div> <div>30</div> <div>% moderate & low intensity land uses / 2</div> <div>)</div> <div>=</div> <div>32</div> <div>%</div> </div> <div> <div>Undisturbed habitat > 50% of Polygon</div> <div>Undisturbed habitat 10 - 50% and in 1-3 patches</div> <div>Undisturbed habitat 10 - 50% and > 3 patches</div> <div>Undisturbed habitat < 10% of 1 km Polygon</div> </div> <div> <div>points = 3</div> <div>points = 2</div> <div>points = 1</div> <div>points = 0</div> </div> </div>		1
H 2.3 Land use intensity in 1 km Polygon: If <div> <div>> 50% of 1 km Polygon is high intensity land use</div> <div>≤ 50% of 1km Polygon is high intensity</div> </div> <div> <div>points = (-2)</div> <div>points = 0</div> </div>		-2
Total for H 2		-1

Rating of Landscape Potential If Score is: ☐ 4 - 6 = H ☐ 1 - 3 = M ☒ < 1 = 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? <i>Choose only the highest score that applies to the wetland being rated.</i>		
<p>Site meets ANY of the following criteria:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan 	points = 2	2
Site has 1 or 2 priority habitats (listed on next page) with in 100m	points = 1	
Site does not meet any of the criteria above	points = 0	

Rating of Value If Score is: ☒ **2 = H** ☐ **1 = M** ☐ **0 = L** *Record the rating on the first page*

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☒ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least 1 <u>contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

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Parametrix

Source: King County,
City of Federal Way



0 50100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

Cowardin Class

- Aquatic Bed (AB)
- Palustrine Scrub Shrub (PSS)
- Palustrine Forested (PFO)

Wetland W18

Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\Parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPH1 Wetland Rating Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 501.00
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

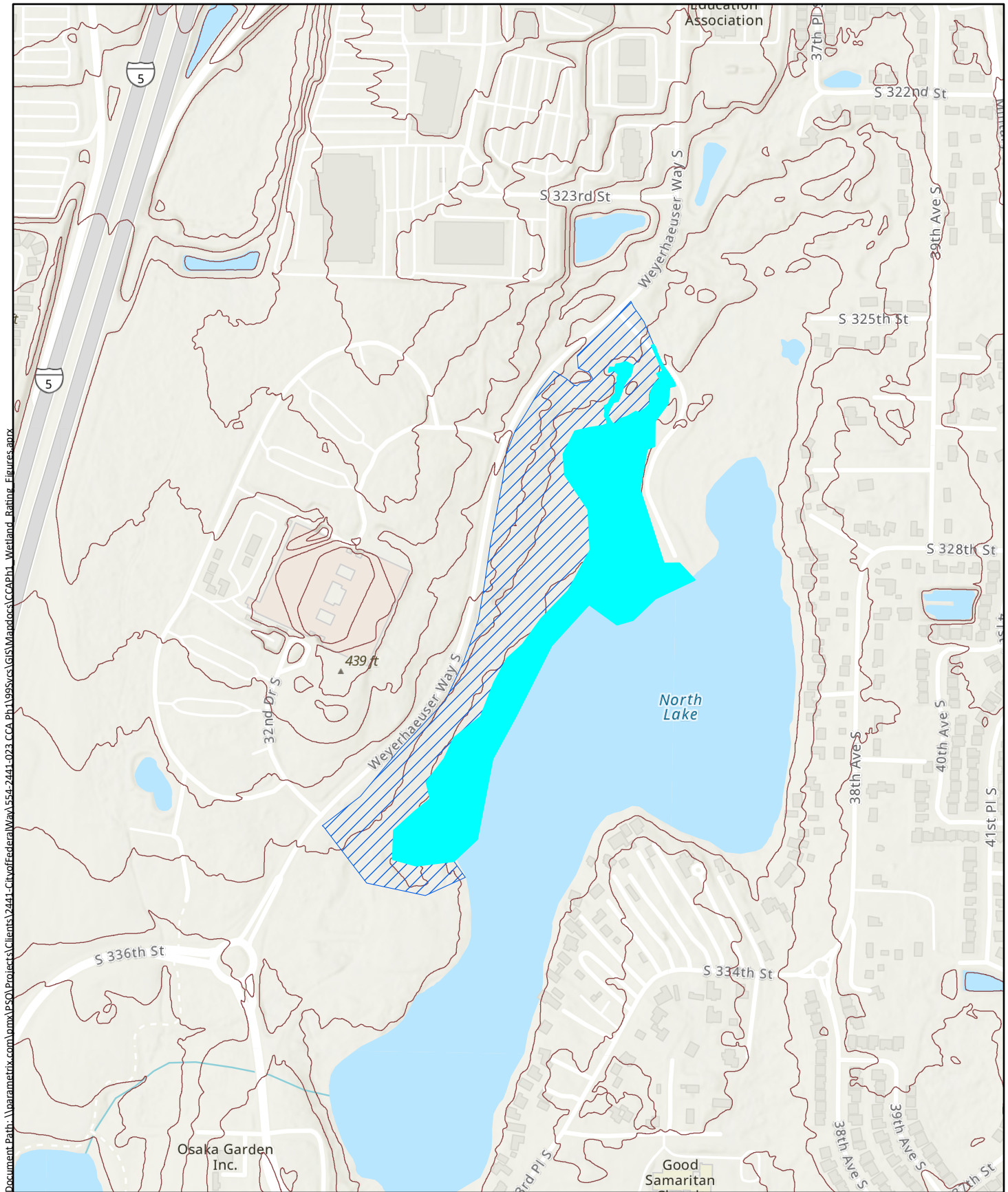
Hydroperiod

- Saturated only
- Seasonally flooded
- Permanently flooded

**Wetland W18
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



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Parametrix

Source: King County,
City of Federal Way, USGS



0 500 1,000
Feet

Wetland (Approx. Boundary)

Contributing Basin

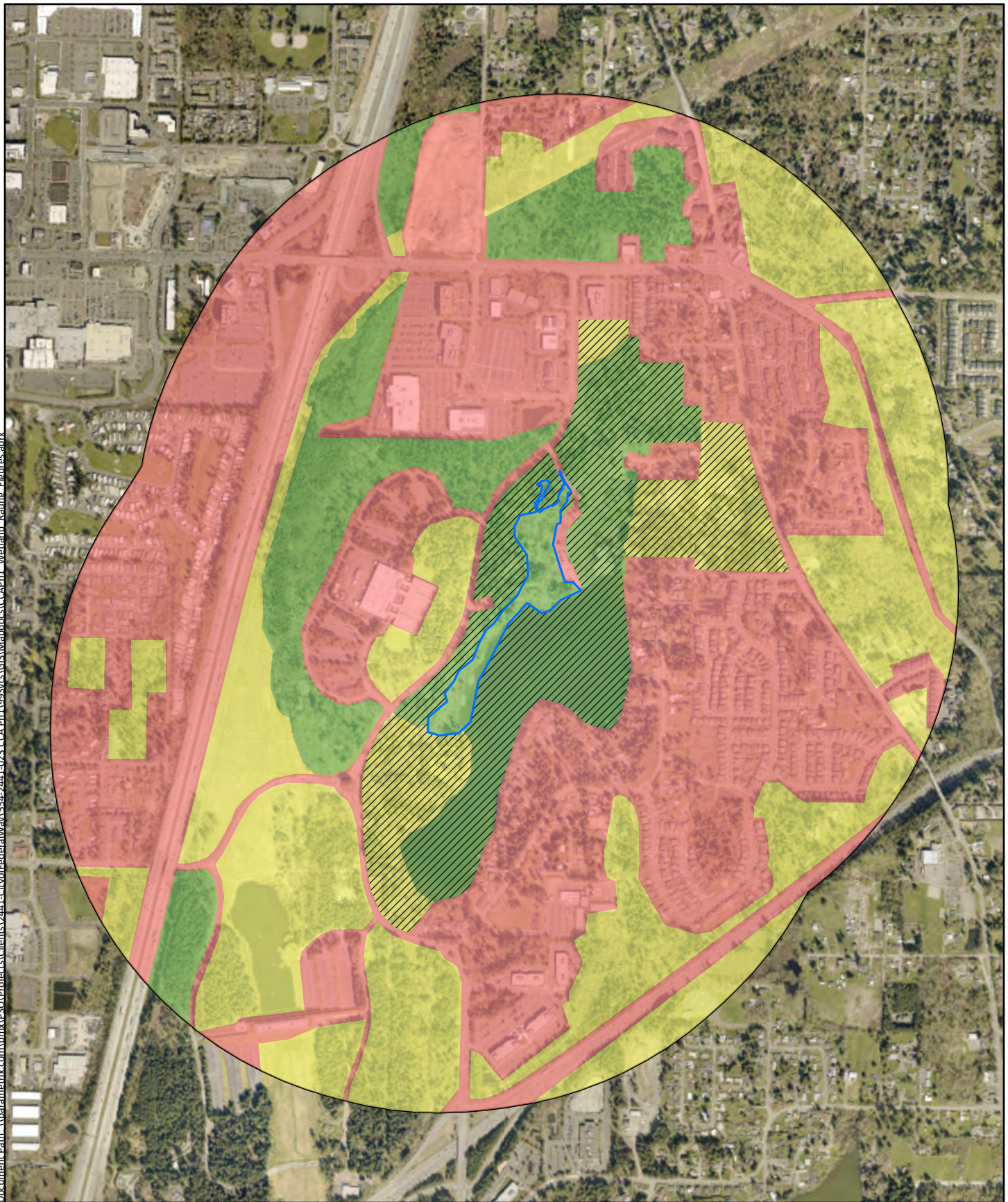
Contours

Wetland W18
Contributing Basin

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

- Wetland
(Approx. Boundary)
- 1-km Polygon

Accessible Habitat

Land Use

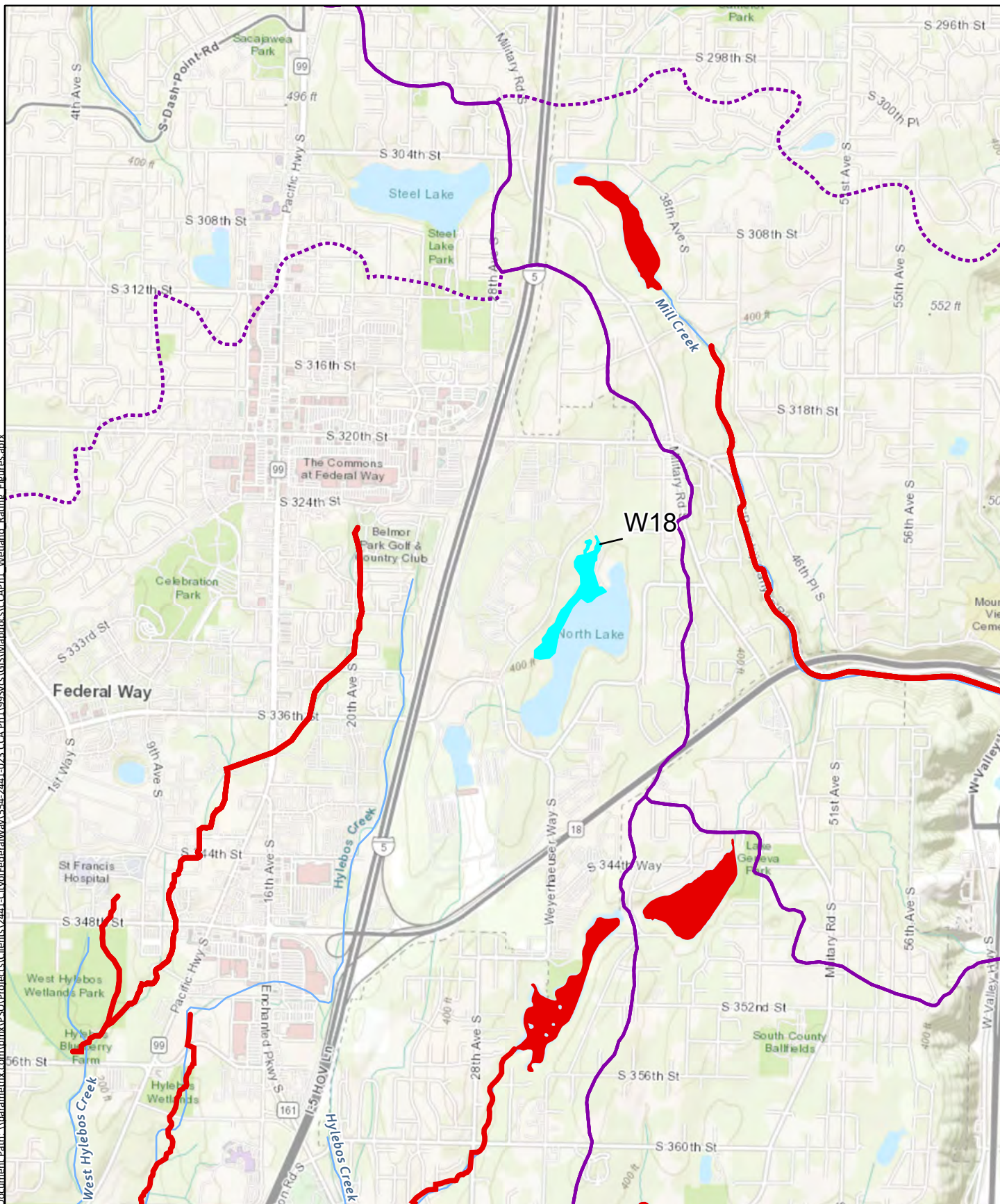
- High
- Low/moderate
- Undisturbed

**Wetland W18
Land Use Intensity**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way, USGS



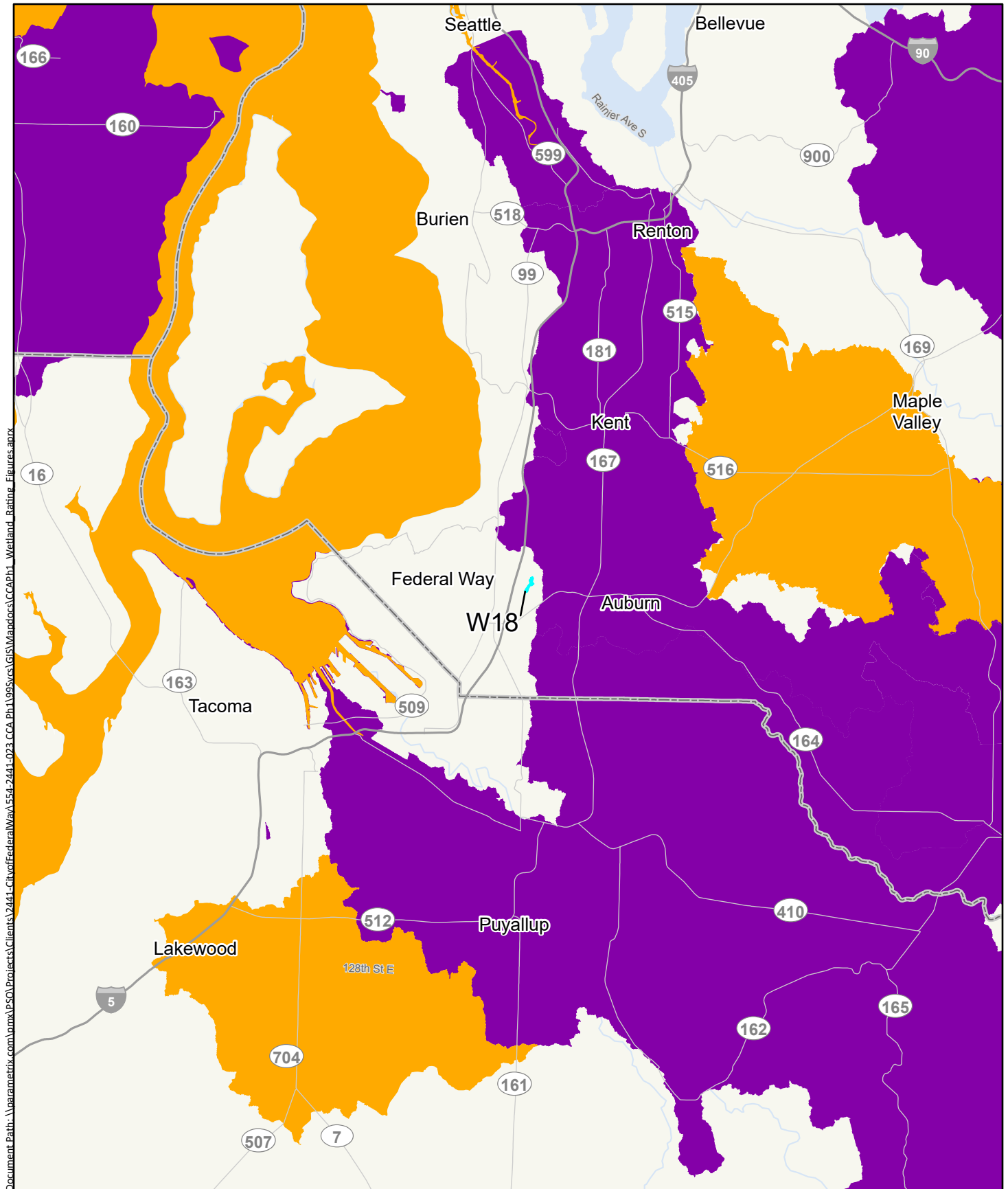
0 0.5 1 Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W18
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



Document Path: \\parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023-CCA-Ph1\1995\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx

Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

Wetland W18

TMDLs (Total Maximum Daily Loads)

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W19 Date of site visit: 1/7/2021Rated by Jsh Wozniak Trained by Ecology? ☒ Yes ☐ No Date of training Jun-14HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☒ Yes ☐ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** II (based on functions ☒ 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	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	H	
Landscape Potential	H	H	L	
Value	M	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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ NO - go to 2 ☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*
*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ NO - go to 3 ☐ **YES** - The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☒ At least 30% of the open water area is deeper than 6.6 ft (2 m).

- ☐ NO - go to 4 ☒ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The wetland is on a slope (*slope can be very gradual*),
☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☐ The water leaves the wetland **without being impounded**.

- ☒ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

- ☒ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

Wetland has two HGM classes - depressional and lake fringe, therefore it is rated as depressional.

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. <u>Characteristics of surface water outflows from the wetland:</u>		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	1
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	
<input checked="" type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).		4
Yes = 4 No = 0		
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	5
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u>		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	0
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1		10
Add the points in the boxes above		

Rating of Site Potential If score is: ☐ 12 - 16 = H ☒ 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 = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	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?		1
Source <u>Waterfowl</u>	Yes = 1 No = 0	
Total for D 2		3
Add the points in the boxes above		

Rating of Landscape Potential If score is: ☒ 3 or 4 = H ☐ 1 or 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 = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	0
Total for D 3		1
Add the points in the boxes above		

Rating of Value If score is: ☐ 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 degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|---|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 0 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- | | | |
|--|------------|---|
| Marks of ponding are 3 ft or more above the surface or bottom of outlet | points = 7 | 3 |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| <input type="checkbox"/> The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- | | | |
|--|------------|---|
| <input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit | points = 5 | 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 | |
| <input type="checkbox"/> Entire wetland is in the Flats class | points = 5 | |

Total for D 4

Add the points in the boxes above

8**Rating of Site Potential** If score is: ☐ 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 function of the site?

D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0

1

D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?

Yes = 1 No = 0

1

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?

Yes = 1 No = 0

1

Total for D 5

Add the points in the boxes above

3**Rating of Landscape Potential** If score is: ☒ 3 = H ☐ 1 or 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. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

- | | | |
|--|------------|---|
| The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): | | 2 |
| <input checked="" type="checkbox"/> Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| <input type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| <input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| <input type="checkbox"/> There are no problems with flooding downstream of the wetland. | points = 0 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6

Add the points in the boxes above

2**Rating of Value** If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|--|----------------------------------|---|
| <input checked="" type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 4 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|---|-------------------------------------|----------|
| <input checked="" type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 3 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

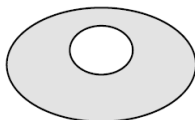
- | | | | |
|-----------------|----------------|------------|---|
| If you counted: | > 19 species | points = 2 | 2 |
| | 5 - 19 species | points = 1 | |
| | < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



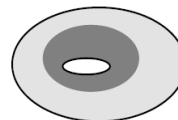
None = 0 points



Low = 1 point

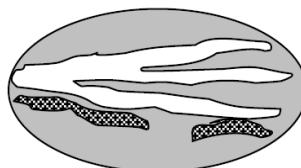


Moderate = 2 points



3

All three diagrams in this row are **HIGH** = 3 points



<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata) 		4
<p>Total for H 1</p>		<p>Add the points in the boxes above</p> <p>16</p>
<p>Rating of Site Potential If Score is: <input checked="" type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input type="checkbox"/> 0 - 6 = L <i>Record the rating on the first page</i></p>		

H 2.0. Does the landscape have the potential to support the habitat function of the site?			
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 8 % undisturbed habitat + (_____ 5 % moderate & low intensity land uses / 2) = 10.5%			
<p>If total accessible habitat is:</p> <p>> $\frac{1}{3}$ (33.3%) of 1 km Polygon points = 3</p> <p>20 - 33% of 1 km Polygon points = 2</p> <p>10 - 19% of 1 km Polygon points = 1</p> <p>< 10 % of 1 km Polygon points = 0</p>	1		
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 18 % undisturbed habitat + (_____ 28 % moderate & low intensity land uses / 2) = 32%			
<p>Undisturbed habitat > 50% of Polygon points = 3</p> <p>Undisturbed habitat 10 - 50% and in 1-3 patches points = 2</p> <p>Undisturbed habitat 10 - 50% and > 3 patches points = 1</p> <p>Undisturbed habitat < 10% of 1 km Polygon points = 0</p>	1		
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0			
Total for H 2		Add the points in the boxes above	0
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = L <i>Record the rating on the first page</i>			

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>		
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score that applies to the wetland being rated.</p>		
<p>Site meets ANY of the following criteria:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan 	<p>points = 2</p>	<p>2</p>
<p>Site has 1 or 2 priority habitats (listed on next page) with in 100m</p>	<p>points = 1</p>	
<p>Site does not meet any of the criteria above</p>	<p>points = 0</p>	
<p>Rating of Value If Score is: <input checked="" type="checkbox"/> 2 = H <input type="checkbox"/> 1 = M <input type="checkbox"/> 0 = L</p>		

Record the rating on the first page

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☒ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☒ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☒ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

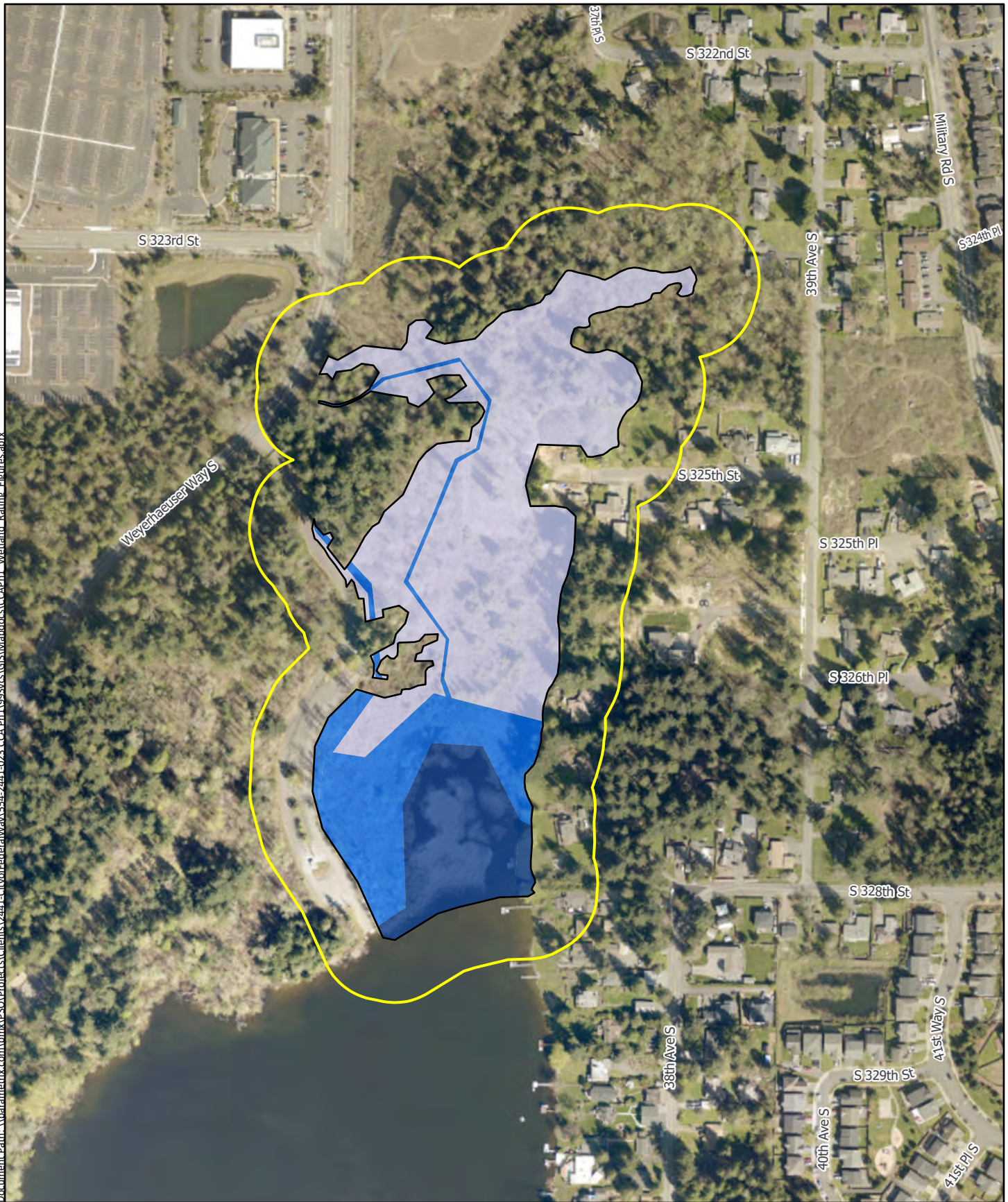
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

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Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

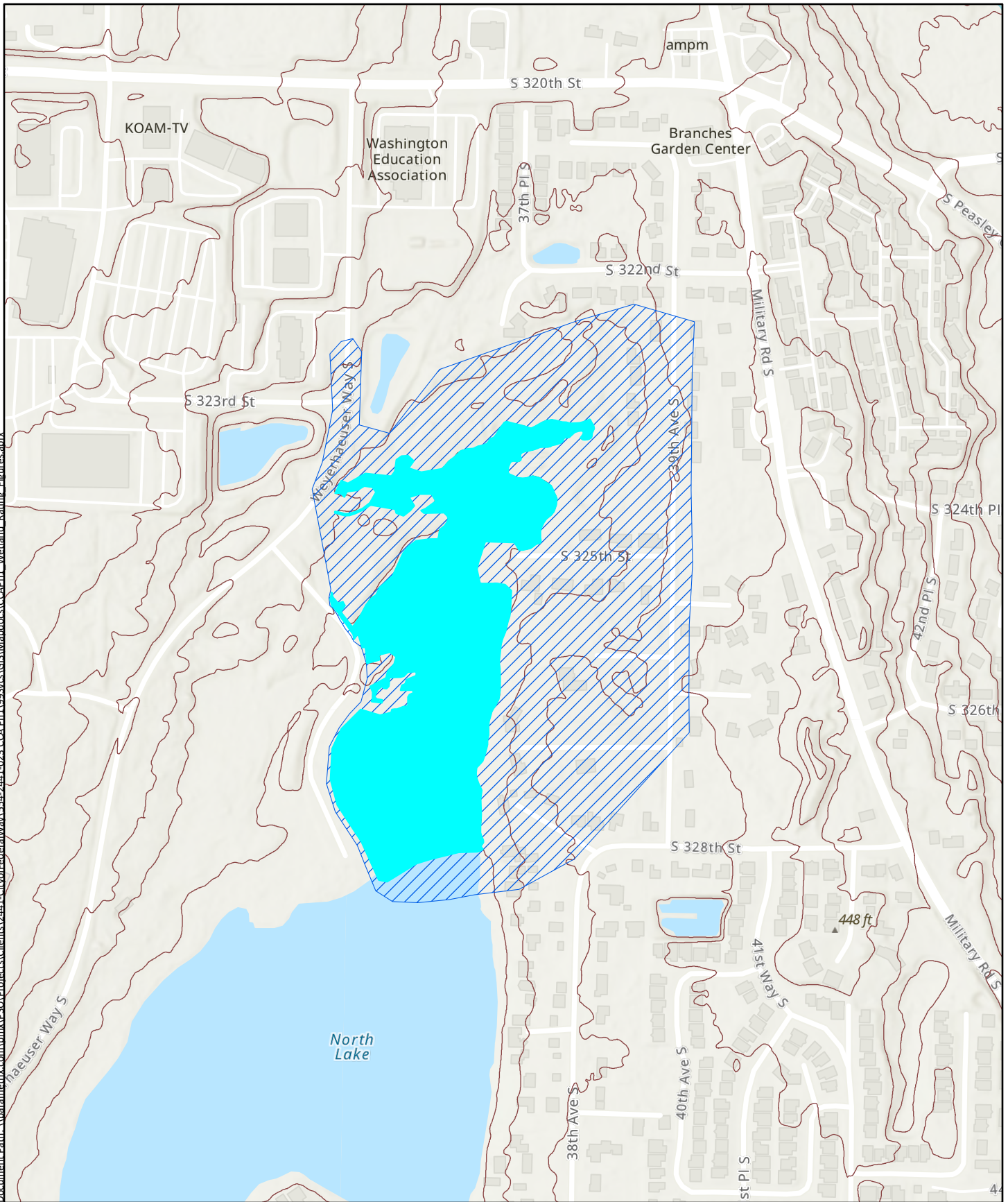
- Hydroperiod**
- Saturated only
 - Seasonally flooded
 - Permanently flooded

**Wetland W19
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

Document Path: \\Parametrix.com\pmx\PSO\Projects\Clients\2441-CityofFederalWay\554-2441-023 CCA Ph1\995\srcs\GIS\Mapdocs\CCPh1 Wetland Rating Figures.aprx




Parametrix

Source: King County,
City of Federal Way, USGS



0 500 1,000
Feet

 Wetland (Approx. Boundary)

 Contributing Basin

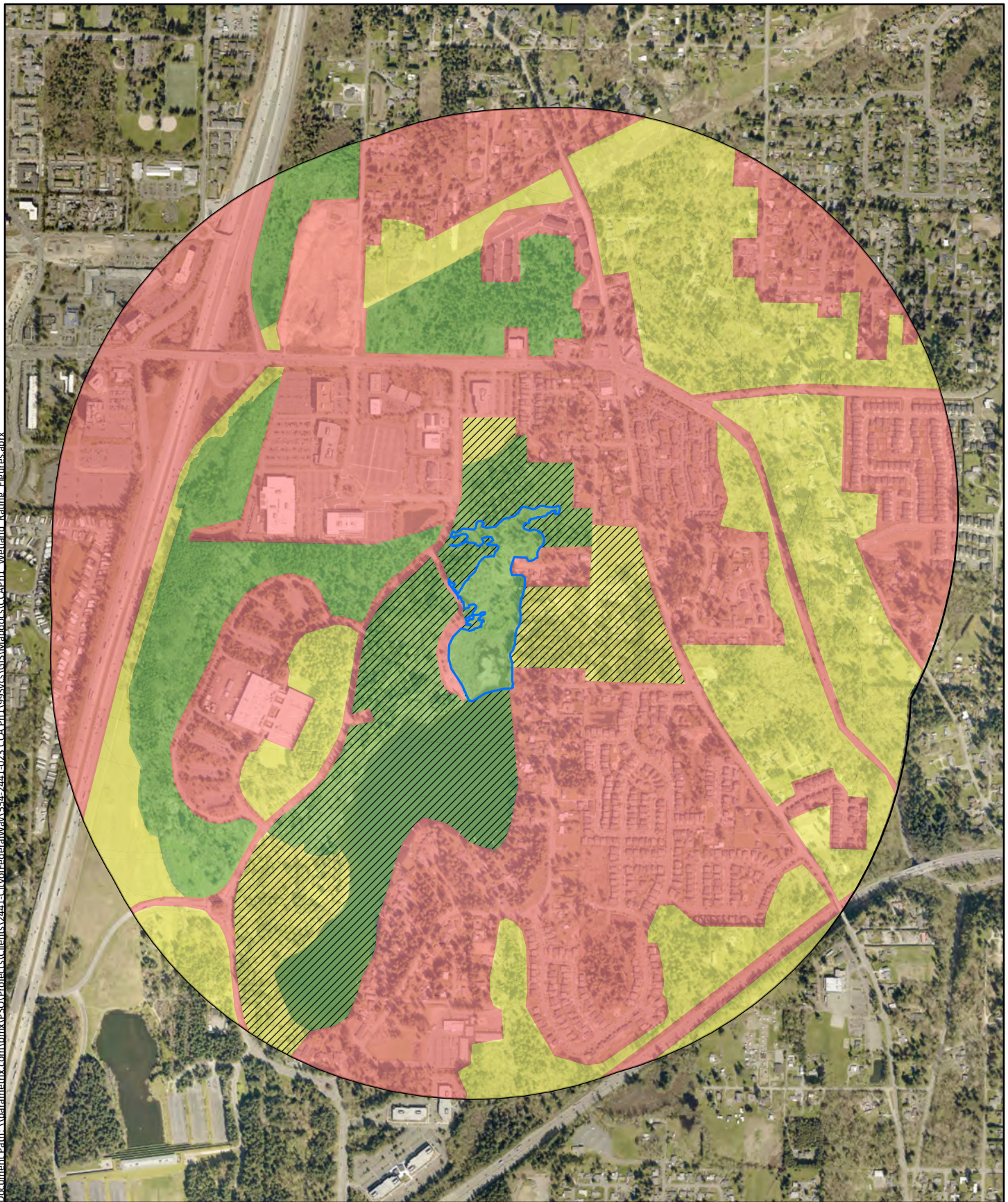
 Contours

**Wetland W19
Contributing Basin**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

- Wetland
(Approx. Boundary)
- 1-km Polygon

Accessible Habitat

Land Use

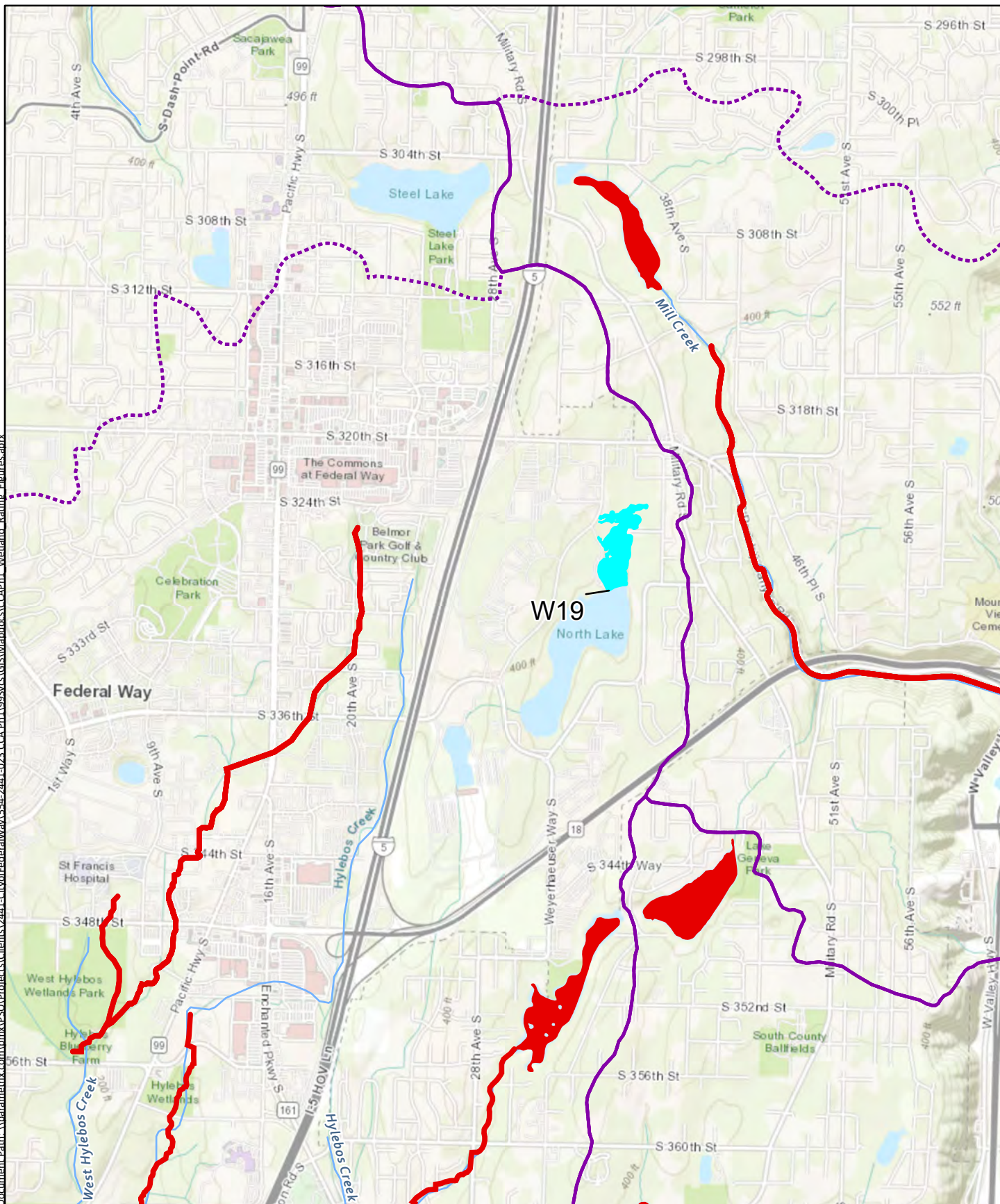
- High
- Low/moderate
- Undisturbed

Wetland W19
Land Use Intensity

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way, USGS



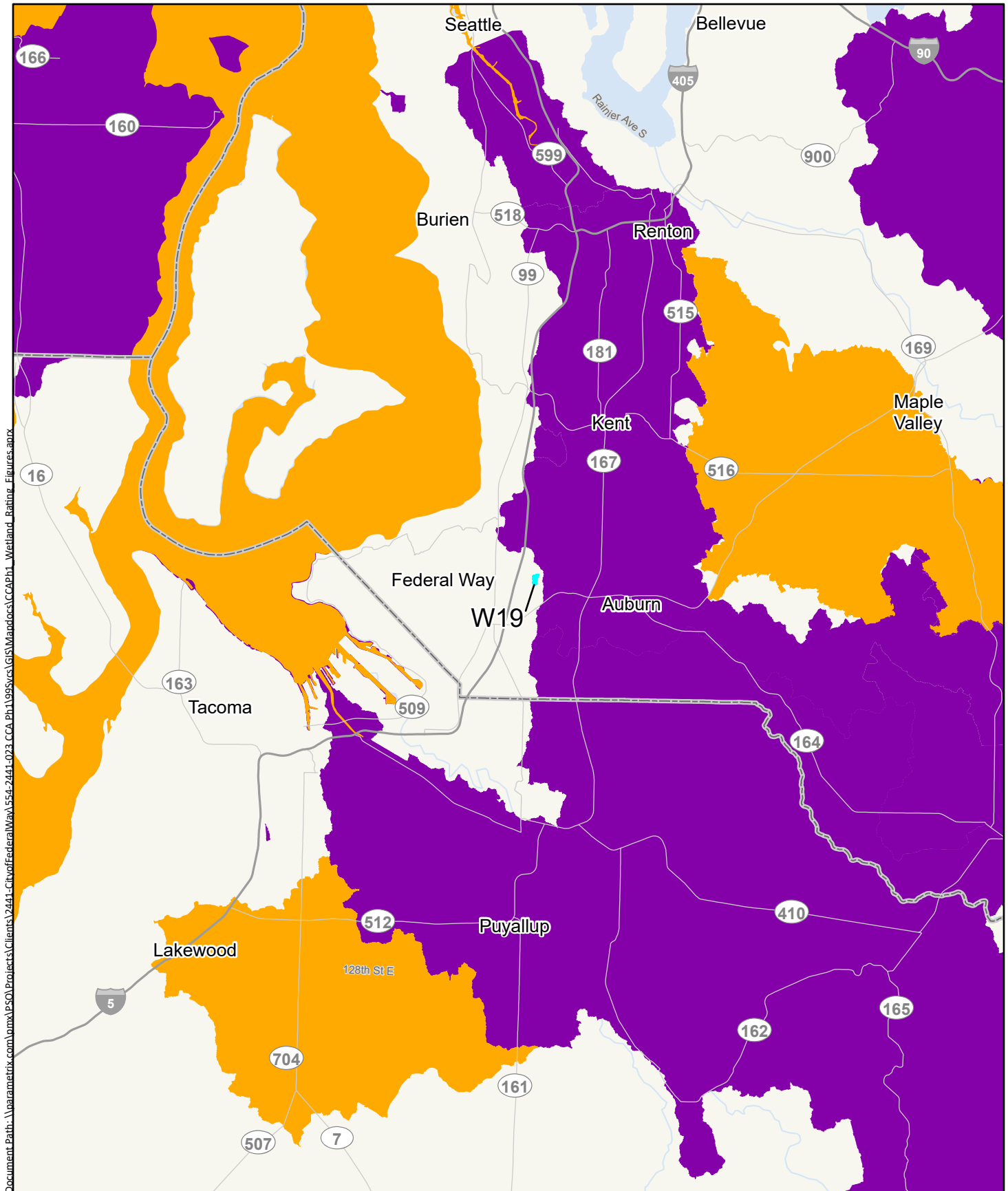
0 0.5 1
Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W19
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



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Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

- Wetland
(Approx. Boundary)
- County Boundary

WQ Improvement Projects

- Approved
- In Development

Wetland W19

TMDLs (Total Maximum Daily Loads)

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

RATING SUMMARY – Western Washington

Name of wetland (or ID #): W20 Date of site visit: 5/3/2021Rated by Amanda Weiss Trained by Ecology? ☒ Yes ☐ No Date of training 2020HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☒ No**NOTE: Form is not complete with out the figures requested (figures can be combined).**Source of base aerial photo/map ESRI**OVERALL WETLAND CATEGORY** IV (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

- Category I** - Total score = 23 - 27
- Category II** - Total score = 20 - 22
- Category III** - Total score = 16 - 19
- X **Category IV** - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	L	L	
Landscape Potential	M	M	L	
Value	M	H	L	Total
Score Based on Ratings	6	6	3	15

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	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km 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	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km 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)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km 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)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km 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)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

- ☒ NO - go to 2 ☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

- ☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**
If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

- ☒ NO - go to 3 ☐ YES - The wetland class is **Flats**
If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

- ☒ NO - go to 4 ☐ YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

- ☒ The wetland is on a slope (*slope can be very gradual*),
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☒ The water leaves the wetland **without being impounded**.

- ☐ NO - go to 5 ☒ YES - The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

- ☐ NO - go to 6 ☐ YES - The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the*

☐ NO - go to 7

☐ YES - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

☐ NO - go to 8

☐ YES - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

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. Characteristics of the average slope of the wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)

Slope is 1% or less	points = 3	2
Slope is > 1% - 2%	points = 2	
Slope is > 2% - 5%	points = 1	
Slope is greater than 5%	points = 0	

S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions):

Yes = 3 No = 0

0

S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:

Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.*

Dense, uncut, herbaceous plants > 90% of the wetland area	points = 6	6
Dense, uncut, herbaceous plants > ½ of area	points = 3	
Dense, woody, plants > ½ of area	points = 2	
Dense, uncut, herbaceous plants > ¼ of area	points = 1	
Does not meet any of the criteria above for plants	points = 0	

Total for S 1

Add the points in the boxes above

8

Rating of Site Potential If score is: ☐ 12 = H ☒ 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 150 ft on the uphill side of the wetland in land uses that generate pollutants?

Yes = 1 No = 0

1

S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?

Other Sources I-5

Yes = 1 No = 0

1

Total for S 2

Add the points in the boxes above

2

Rating of Landscape Potential If score is: ☒ 1 - 2 = M ☐ 0 = L

Record the rating on the first page

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 = 1 No = 0

0

S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list.*

Yes = 1 No = 0

1

S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the basin in which the unit is found?*

Yes = 2 No = 0

0

Total for S 3

Add the points in the boxes above

1

Rating of Value If score is: ☐ 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 erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows*Dense, uncut, **rigid** plants cover > 90% of the area of the wetland

points = 1

All other conditions

points = 0

0

Rating of Site Potential If score is: ☐ 1 = M ☒ 0 = L

Record the rating on the first page

S 5.0. Does the landscape have the potential to support 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 = 1 No = 0

1

Rating of Landscape Potential If score is: ☒ 1 = M ☐ 0 = L

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:

The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)

points = 2

Surface flooding problems are in a sub-basin farther down-gradient

points = 1

No flooding problems anywhere downstream

points = 0

2

S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for S 6

Add the points in the boxes above

2

Rating of Value If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|---|----------------------------------|---|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 0 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|-------------------------------------|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | | 2 points |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

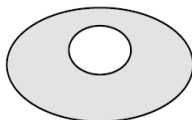
- | | | |
|-----------------|----------------|------------|
| If you counted: | > 19 species | points = 2 |
| | 5 - 19 species | points = 1 |
| | < 5 species | points = 0 |

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



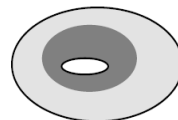
None = 0 points



Low = 1 point

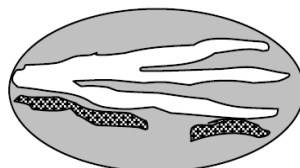
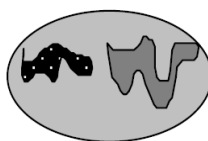


Moderate = 2 points



0

All three diagrams
in this row are
HIGH = 3 points



H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>		0
<input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)		
Total for H 1 Add the points in the boxes above		
Rating of Site Potential If Score is: <input type="checkbox"/> 15 - 18 = H <input type="checkbox"/> 7 - 14 = M <input checked="" type="checkbox"/> 0 - 6 = L Record the rating on the first page		

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 6 % undisturbed habitat + (4 % moderate & low intensity land uses / 2) = 8% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0		0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> 15 % undisturbed habitat + (26 % moderate & low intensity land uses / 2) = 28% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0		
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0		-2
Total for H 2 Add the points in the boxes above		-1
Rating of Landscape Potential If Score is: <input type="checkbox"/> 4 - 6 = H <input type="checkbox"/> 1 - 3 = M <input checked="" type="checkbox"/> < 1 = 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? Choose only the highest score that applies to the wetland being rated. Site meets ANY of the following criteria: points = 2 <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0		0
Rating of Value If Score is: <input type="checkbox"/> 2 = H <input type="checkbox"/> 1 = M <input checked="" type="checkbox"/> 0 = L Record the rating on the first page		

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <input type="checkbox"/> Yes - Go to SC 1.1 <input type="checkbox"/> No = Not an estuarine wetland	
SC 1.1. 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? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <input type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf <input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <input type="checkbox"/> Yes - Go to SC 3.3 <input type="checkbox"/> No - 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? <input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. 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 combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog	

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> 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, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon 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 lagoon (<i>needs to be measured near the bottom</i>)</p> <p><input type="checkbox"/> Yes - Go to SC 5.1 <input type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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 on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p><input type="checkbox"/> Yes - Go to SC 6.1 <input type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p><input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p><input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	

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Parametrix

Source: King County,
City of Federal Way



- Wetland
(Approx. Boundary)
- 150-ft Buffer

- Dense Plant Cover
- Cowardin Class**
- Palustrine Emergent (PEM)

Wetland W20
Cowardin Plant Classes

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

0 50 100
Feet

Document Path: \\parametrix.com\proj\PSO\Projects\Clients\2441-City of Federal Way\554-2441-023-CCA-Ph1\1995\src\GIS\Mapdocs\CCAPh1_Wetland_Rating_Figures.aprx



Parametrix

Source: King County,
City of Federal Way



0 50 100
Feet

- Wetland
(Approx. Boundary)
- 150-ft Buffer

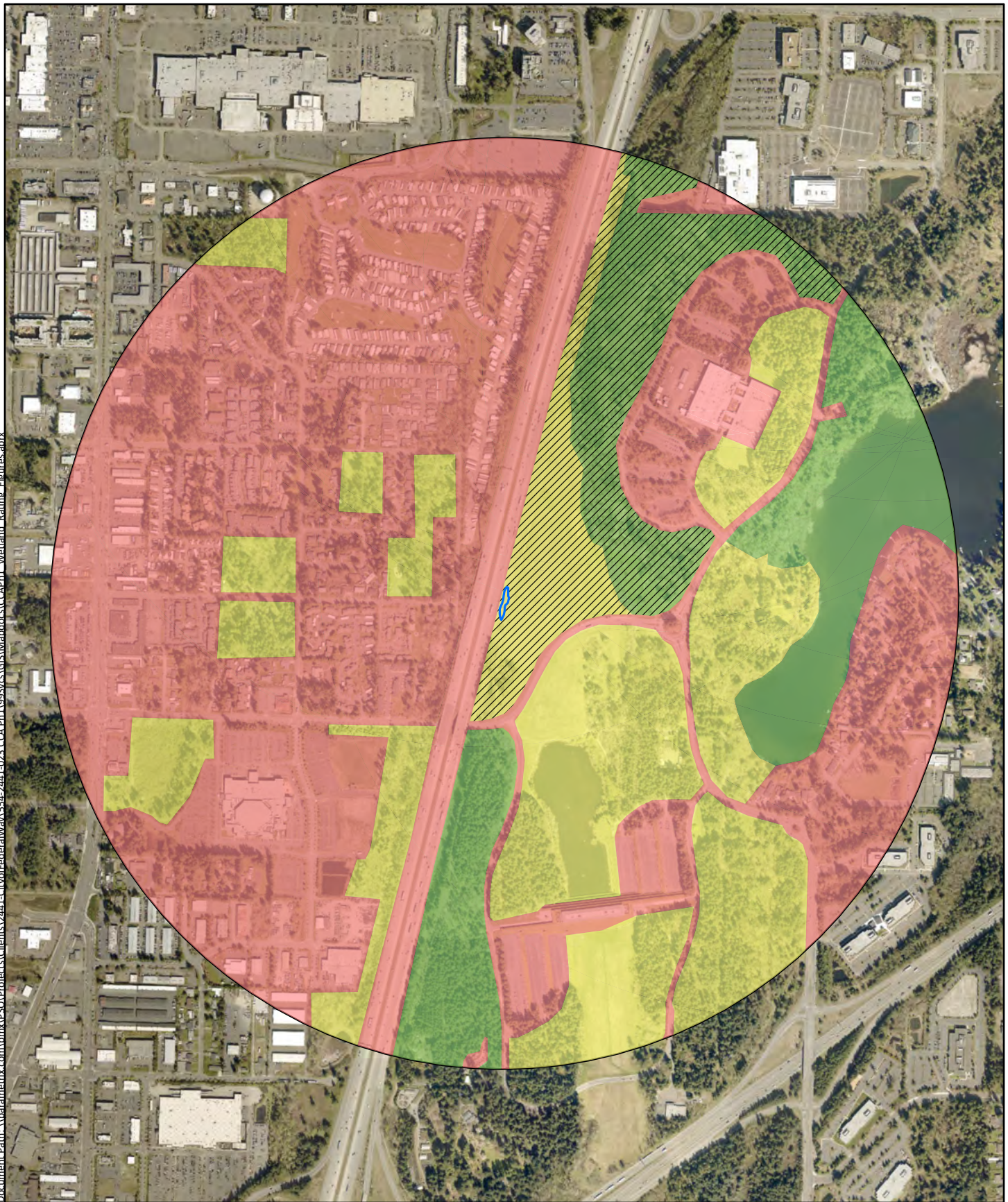
- Hydroperiod**
- Saturated only
 - Occasionally flooded

**Wetland W20
Hydroperiods**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way



0 500 1,000
Feet

- Wetland
(Approx. Boundary)
- 1-km Polygon

Accessible Habitat

Land Use

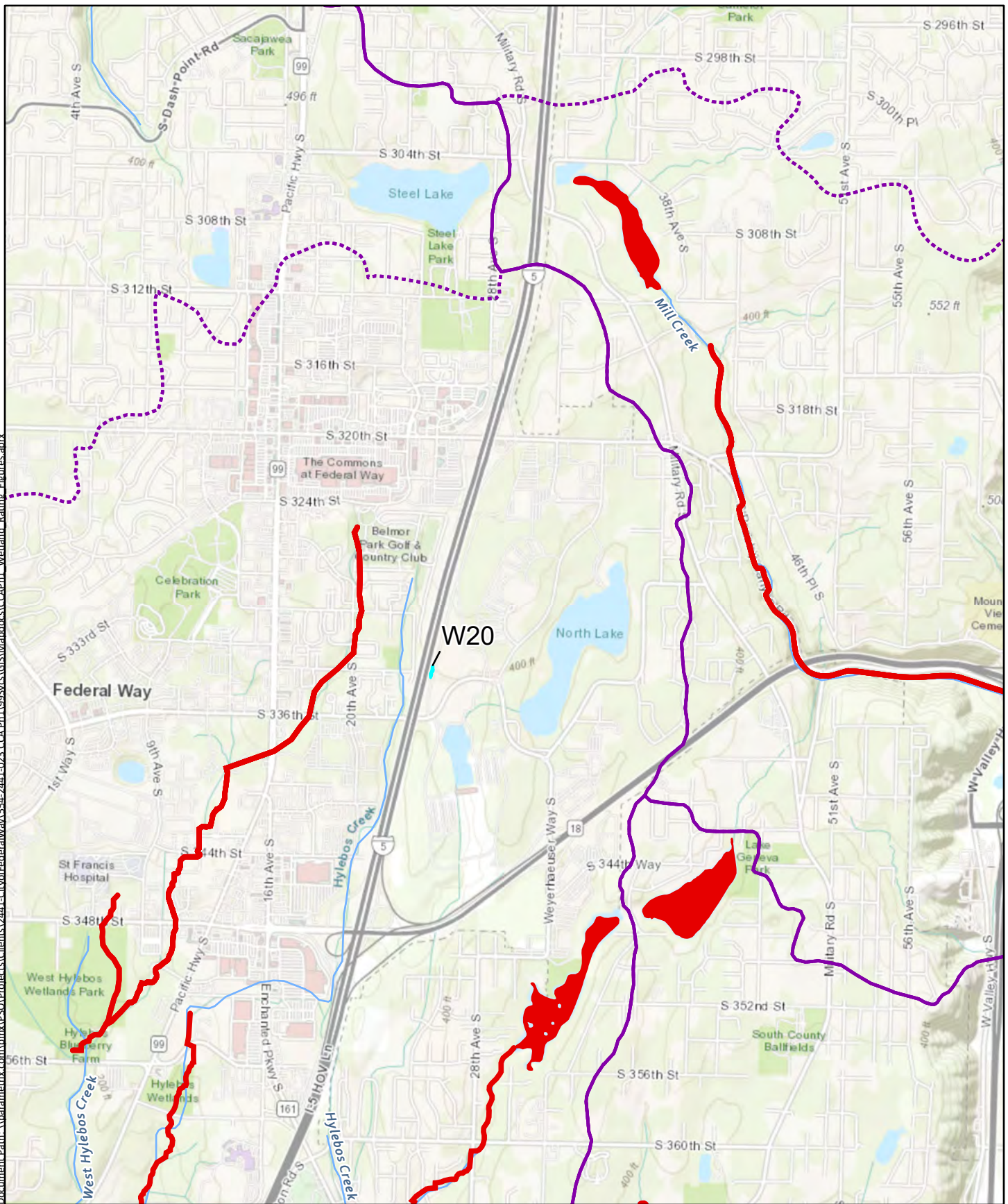
- High
- Low/moderate
- Undisturbed

**Wetland W20
Land Use Intensity**

Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA

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Parametrix

Source: King County,
City of Federal Way, USGS



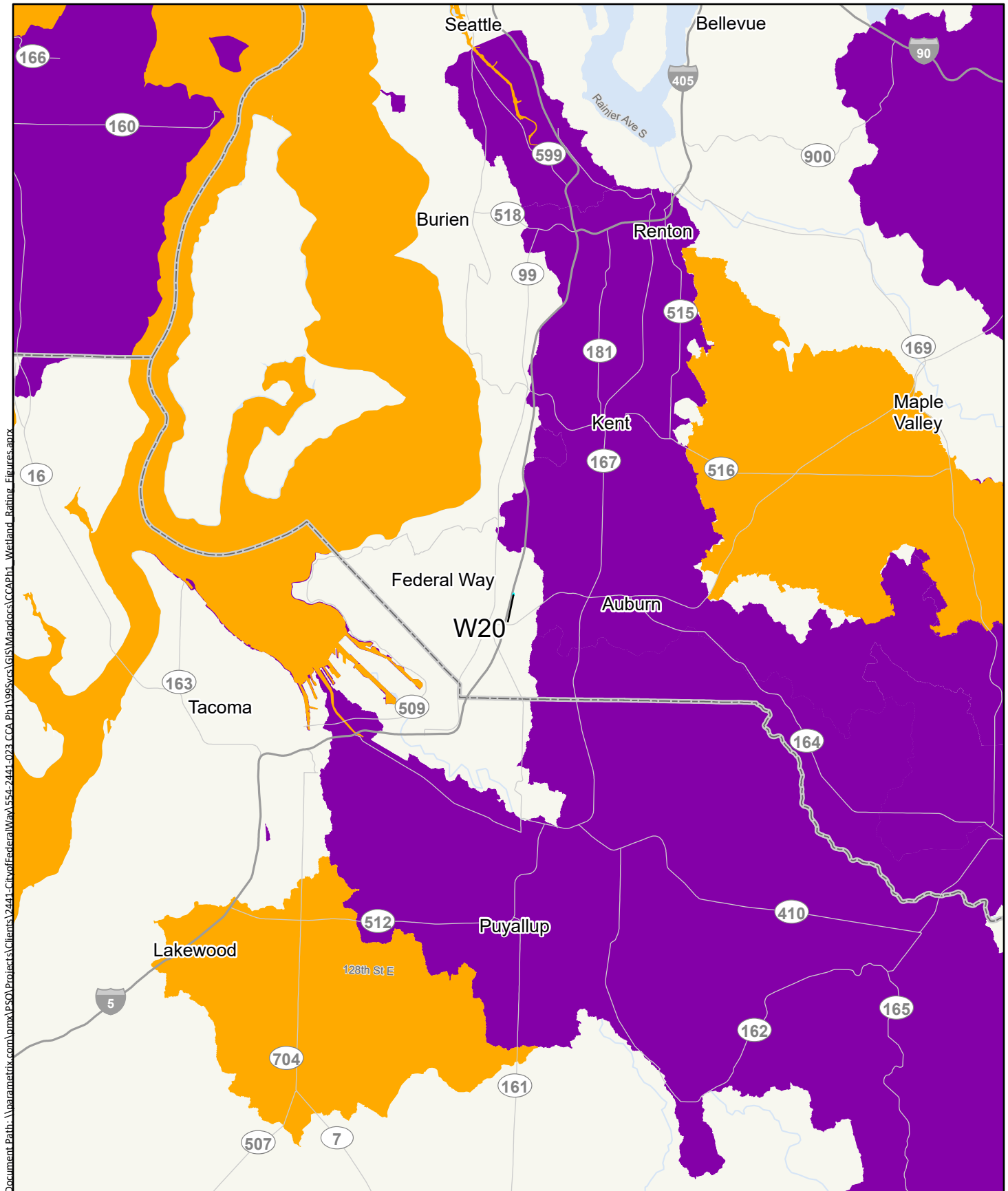
0 0.5 1 Miles

Wetland
(Approx. Boundary)
303(d)

Watershed
Subwatershed
NHD Streams

Wetland W20
303(d) Water Quality
Federal Way City Center Access Project
Wetland Rating Forms

Federal Way, WA



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Parametrix

Source: King County,
City of Federal Way



0 2.5 5
Miles

Wetland
(Approx. Boundary)
County Boundary

WQ Improvement Projects
Approved
In Development

Wetland W20
TMDLs (Total Maximum Daily Loads)
Federal Way City Center Access Project
Wetland Rating Forms
Federal Way, WA

Appendix E

Photolog



Photo 1. Wetland W1, emergent wetland vegetation transitioning to upland vegetation, facing east. July 2020.



Photo 2. Wetland W2, scrub-shrub habitat, facing north. July 2020



Photo 3. Wetland W3, north of S 320th St, emergent habitat, facing east. July 2020.



Photo 4. Wetland W5, looking down into the lagg on the east side of the bog. March 2024.



Photo 5. W5 interior at the north end; photo taken at SP-8. August 2020.



Photo 6. Wetland W5, bog with *Sphagnum* moss, bog labrador tea (*Ledum groenlandicum*), and Western hemlock (*Tsuga heterophylla*). March 2024



Photo 7. Wetland W6 and East Hylebos Creek Tributary 0016A. July 2020.



Photo 8. Wetland W7 adjacent to southbound I-5, looking north. July 2020.



Photo 9. Wetland W9, slope wetland within to I-5 cloverleaf at 320th St, facing west. July 2020.



Photo 10. Wetland W10, interior showing emergent and forested wetland habitat. March 2024.



Photo 11. Wetland W11, interior showing aquatic bed, emergent and scrub-shrub habitat, facing northeast. August 2020.



Photo 12. Wetland W11, facing north. March 2024.



Photo 13. Wetland W12, between southbound I-5 south and the on-ramp at S 320th St, facing south. June 2024.



Photo 14. Wetland W13, emergent and scrub-shrub habitat, woolgrass (*Scirpus cyperinus*) in the foreground. September 2020.



Photo 15. Wetland W14, forested and scrub-shrub habitat showing hardhack (*Spiraea douglasii*) and red alder (*Alnus rubra*), looking north. September 2020.



Photo 16. Wetland W15, showing emergent and scrub-shrub habitat, facing north. August 2020.



Photo 17. Wetland W17 interior, showing forest habitat with dense understory, facing south. January 2021.



Photo 18. Wetland W18 interior, forested habitat. January 2021.



Photo 19. Wetland W19 interior, forest habitat. January 2021.



**Photo 20. Wetland W20, emergent habitat adjacent to southbound I-5, water drainages visible, facing north.
May 2021.**



**Photo 21. Wetland W22 and the East Fork Hylebos Creek Tributary 0016A, forested habitat, looking southwest.
June 2024.**



Photo 22. Wetland W23 and the East Fork Hylebos Creek Tributary 0016A, forested habitat. May 2021.



Photo 23. Wetland W28, dominated by invasive species, Himalayan blackberry (*Rubus armeniacus*). Photo shared from Sound Transit OMF South project. July 2023.



Photo 24. Wetland W29, located within the Federal Way Park and Ride parking lot. Photo shared from Sound Transit OMF South project. April 2023.



Photo 25. East Fork Hylebos Creek Tributary 0016A near the outlet in W5. August 2020.



Photo 26. Young upland forest habitat within proposed S 324th Street extension, east of I-5. January 2021



Photo 27. Mature upland forest habitat, east of Weyerhaeuser Way South. January 2021.



Photo 28. Young upland forest habitat, north of W5, facing south.