# CRITICAL AREAS REPORT AND CONCEPTUAL MITIGATION PLAN

# GREENLINE BUSINESS PARK FEDERAL WAY, WASHINGTON

# Prepared For:

TOM MESSMER FEDERAL WAY CAMPUS, LLC Los Angeles, California

Prepared By:

TALASAEA CONSULTANTS, INC. Woodinville, Washington

# **Critical Areas Report and Conceptual Mitigation Plan**

**Greenline Business Park Federal Way, Washington** 

# Prepared For:

Tom Messmer Federal Way Campus, LLC 11100 Santa Monica Boulevard, Suite 850 Los Angeles, California 90025

Prepared By:

Talasaea Consultants, Inc. 150250 Bear Creek Road NE Woodinville, Washington 98077 (425) 861-7550

#### **EXECUTIVE SUMMARY**

**PROJECT NAME:** Greenline Business Park

PROJECT LOCATION: The approximate address for the Site is 32901 Weyerhaeuser Way South in the

City of Federal Way, Washington. The project will take place on six parcels (King County Parcel numbers 1621049056, 1521049178, 1621049013, 1621049030, 2285000010, and 7978200420) totaling 146 acres. The Public Land Survey System location of the Site is Sections 16 and 21, Township 21 North, Range 4

East, Willamette Meridian.

CLIENT: Tom Messmer, Vice President, Federal Way Campus, LLC

PROJECT STAFF: Bill Shiels, Principal; Ann Olsen, RLA; Jennifer Marriott, PWS, Senior Ecologist;

David Teesdale, PWS, Senior Ecologist; Richard Tveten, Senior Ecologist;

Kristen Numata, Ecologist.

FIELD SURVEY: Site evaluations and wetland delineations were performed over multiple days

from December 2015 through April 2016.

**DETERMINATION:** Sixty-three wetlands were identified on the Project Site. North Lake occurs adjacent to the Site. One man-made stream (Stream AC) connects the existing stormwater pond to Weyerhaeuser Pond off-site to the south.

**HYDROLOGY:** Hydrology for the on-site wetlands is supported, for the most part, by seasonal precipitation and interception of surface water flow, as well as groundwater to a lesser extent.

**SOILS:** The NRCS maps one type of soil over the majority of the Site, Alderwood gravelly sandy loam, 0 to 8 percent slopes. A small area in the northwest corner is mapped as Alderwood gravelly sandy loam, 8-15% slopes, and a small area of Orcas Peat is mapped over the far eastern portion of the Site. The National Technical Committee on Hydric Soils does not include Alderwood gravelly sandy loam as a hydric soil, however, Orcas Peat is identified as a hydric soil.

**VEGETATION:** The Site is mix of developed areas and conifer and deciduous mixed forests. Typical native species present within the forested areas include Douglas fir, western red cedar, big-leaf maple, red alder, black cottonwood, salmonberry, vine maple, sword fern, and other native herbaceous and shrub species. Several non-native species of tree are present throughout the property, including several species of eastern oak and European ash. Typical vegetation within the wetlands includes salmonberry and hardhack with limited amounts of sedges and rushes.

**PROPOSED PROJECT:** The Applicant proposes to construct approximately 1,068,000 square feet of new warehouse and office space divided amongst three new buildings. The Weyerhaeuser Tech Center will remain, but the existing parking lots will be reconfigured to a more compact arrangement around the Tech Center to maximize space. Associated infrastructure to be constructed includes five new stormwater detention facilities, including reconfiguring the existing stormwater pond, parking for both cars and trucks, and enough maneuvering space for the truck traffic anticipated around these buildings. Due to the size of the proposed buildings, required parking and stormwater, direct and indirect impacts to some wetlands and buffer encroachments are unavoidable.

**ASSESSMENT OF DEVELOPMENT IMPACTS**: The proposed site plan has been designed to minimize impacts to critical areas to the greatest extent practicable while meeting the criteria for development of a viable project and conforming to the City of Federal Way standards. In attempting to avoid wetland impacts on this site, several different configurations were evaluated to find the best fit for the project needs. Despite these efforts, some impacts to critical areas are unavoidable in order to achieve an economically viable project.

Portions of 63 wetlands, one stream, and North Lake are located on or adjacent to the site. Construction of the proposed development would directly impact (fill) 13,428 square feet (0.31-acre) of wetlands for the buildings, parking, and stormwater facilities. Four wetlands will be insufficiently buffered, resulting in an additional 4,912 square feet (0.11-acre) of wetland as being considered indirect wetland impacts due to site development encroachments.

No impacts are proposed within the ordinary high water mark of the on-site stream. While no work is proposed within the ordinary high water mark of the stream, work is proposed in proximity to the stream channel to construct new pond outfalls into the stream buffer. The existing structure will need to be relocated. The east bank stream buffer is proposed to be reduced by 25%, with replacement buffer provided adjacent to the buffer on the west side of the stream. No development activities are proposed on or adjacent to North Lake.

**CONCEPTUAL MITIGATION PLAN:** Wetland impacts will be mitigated through a multi-part mitigation plan including elements of wetland creation, wetland enhancement, wetland and stream buffer restoration and enhancement, and stream buffer replacement. Temporary construction impacts resulting from site grading will be restored post-construction. Wetland creation is currently proposed at a greater than 2:1 ratio, which is more than required by the Federal Way Revised Code.

#### Mitigation proposed:

•	Wetland Creation	36,023 square feet
•	Wetland Enhancement	2,020 square feet
•	Wetland Buffer Creation	98,168 square feet
•	Wetland/Stream Buffer Restoration	35,689 square feet
•	Stream Buffer Enhancement	94,266 square feet
•	Stream Buffer Replacement	14,489 square feet

All critical area mitigation will be constructed prior to or concurrent with site development activities. A final mitigation plan will be prepared and submitted once preliminary concurrence has been provided for this conceptual mitigation plan. Performance monitoring will extend for a minimum of 5 years over all elements of the mitigation plan.

# **TABLE OF CONTENTS**

Executive Su	ımmary	i
Table of Con	tents	iii
List of Figure	9S	vi
List of Appen	ndices	vi
Chapter 1.	Introduction	
1.1	Purpose of Report	
1.2	Statement of Accuracy	
1.3	Qualifications	
Chapter 2.	Property Description	
2.1	Property Location and Description	
2.2	Existing Site Development	
2.3	Historical Land Uses	
Chapter 3.	Methodology	
3.1	Background Data Reviewed	
3.2	Field Investigation	
Chapter 4.	Results	
4.1	Analysis of Existing Information	
4.1.1	USGS Quadrangle	
4.1.2	National Wetland Inventory	
4.1.3	Natural Resources Conservation Service	
4.1.4	King County GIS Database	
4.2	Analysis of Existing Conditions – Wetlands	
4.2.1	Wetlands AE, AF and AH	
4.2.2	Wetland AG	
4.2.3	Wetlands AI, AL, AJ, AO, AR, AS, AM	7
4.2.4	Wetland AV	
4.2.5	Wetland BA	7
4.2.6	Wetland BA-2	7
4.2.7	Wetland BB	7
4.2.8	Wetland BD-North	8
4.2.9	Wetland BE	8
4.2.10	Wetland BF	8
4.2.11	Wetland BK	8
4.2.12	Wetland BL	8
4.2.13	Wetland BR	8
4.2.14	Wetland BS-North	9
4.2.15	Wetland BS-South	9
4.2.16	Wetland CB	9
4.2.17	Wetland CD	9
4.2.18	Wetland CE	9
4.2.19	Wetland CG	
4.2.20	Wetland DE	
4.2.21	Wetlands DF, DG, DH, and DI	
4.2.22	Wetland DK	10

4.2.23	Wetland El	10
4.2.24	Wetlands EJ, EK, EL, and EM	10
4.2.25	Wetland FA	10
4.2.26	Wetland FB	11
4.2.27	Wetland FD	11
4.2.28	Wetland FE	11
4.2.29	Wetland FF	11
4.2.30	Wetland GB-North	11
4.2.31	Wetland IA	11
4.2.32	Wetlands KA, KB, KC, KD, KF, KG, KH, KI, KJ, KK, KL, KM, KN	, KT,
	KU, KV, KW	12
4.2.33	Wetland PG (Previously identified as Wetland BJ)	12
4.2.34	Wetland PK	
4.3	Analysis of Existing Conditions – Streams and Other Features	12
4.3.1	North Lake	12
4.3.2	Weyerhaeuser Pond (off-site)	13
4.3.4	Non-regulated Ditches	
Chapter 5.	Wildlife and Listed Species	13
5.1	Wildlife Surveys and Assessments	13
5.2	Listed Species	14
Chapter 6.	Regulatory Review	
6.1	Federal and State Regulations	15
6.2	City of Federal Way Zoning Code	15
6.2.1	Non-SMZ Wetlands	
6.2.2	Streams	16
6.3	Shoreline Management Zone (SMZ)	16
6.4	Other Linear Features	16
Chapter 7.	Proposed Project	16
7.1	Proposed Project	
7.2	Stormwater Treatment	17
Chapter 8.	Impact Analysis	18
8.1	Wetland Impacts	
8.2	Temporary Construction Impacts	19
8.3	Stream Impacts	
8.4	Mitigation Sequencing	
8.5	Mitigation Analysis	
8.6	Indirect Wetland Impact Analysis	
8.6.1	Quality, sensitivity, and functions of the aquatic resource	
8.6.2	Nature of adjacent land use activity and its potential for impacts	
	aquatic resource	
8.6.3	Character of the existing buffer area (including soils, slope, vege	
_	etc.)	
8.6.4	Intended functions of the buffer	
Chapter 9.	Conceptual Mitigation Plan	
9.1	Agency Policies and Guidance	
9.2	Standard Mitigation Measures	26

9.3	Project Site Mitigation Details	26
9.4	Watershed Approach	27
9.5	Proposed Mitigation Plan	27
9.5.1	Wetland Creation	28
9.5.2	Wetland Enhancement	29
9.5.3	Wetland Buffer Creation	29
9.5.4	Wetland/Stream Buffer Restoration	29
9.5.5	Stream Buffer Enhancement	30
9.5.6	Performance Monitoring and Maintenance	30
Chapter 10.	Summary	
	References	

# LIST OF FIGURES

Figures occur at the end of the report.

Figure 2 – Na Figure 3 – NF	cinity Map & Driving Directions ational Wetlands Inventory Map RCS Soil Map rdrologic Connections Overview	
	LIST OF TABLES	
Table 2. Sum	RC Wetland Buffer Requirements (FWRC 19.145.420)	19
	APPENDICES	
Appendix B: Appendix C: Appendix D:	Wetland Determination Data Forms, Talasaea Consultants, 2016 Feature Summary Table, Talasaea Consultants, 2017 Photodocument, Talasaea Consultants, 2016 Wetland Rating Forms with Figures, Talasaea Consultants, 2016 & 201 Conceptual Mitigation Plan Sheets	7

**Sheet W1.1.** Existing Conditions Plan **Sheet W1.2.** Existing Conditions Plan

**Sheet W1.3.** Proposed Site Plan, Impacts, and Mitigation Overview Plan **Sheet W1.4.** Proposed Site Plan, Impacts, and Mitigation Overview Plan

Sheet W2.0. Conceptual Grading Plan

**Sheet W2.1.** Conceptual Plant Community Plan **Sheet W2.2.** Conceptual Plant Community Plan

#### CHAPTER 1.INTRODUCTION

# 1.1 Purpose of Report

This report is the result of an existing conditions study for a 146-acre project area that is a part of the Federal Way Campus, LLC property (referred to hereinafter as the "Site"). The Site is located in Federal Way, Washington (**Figure 1**). The Site is comprised of portions of six parcels (King County tax parcel numbers 1621049056, 1521049178, 1621049013, 1621049030, 2285000010, and 7978200420). This report has been prepared to comply with the requirements of the City of Federal Way guidelines. This report will provide and describe the following information:

- General property description;
- Methodology for critical areas investigation;
- Results of critical areas background review and field investigation;
- Existing site conditions;
- Wildlife assessment;
- Regulatory review;
- Proposed project discussion;
- Project impacts; and
- Conceptual mitigation plan.

# 1.2 Statement of Accuracy

Stream and wetland characterizations and ratings were conducted by trained professionals at Talasaea Consultants, Inc., and adhered to the protocols, guidelines, and generally accepted industry standards available at the time the work was performed. The conclusions in this report are based on the results of analyses performed by Talasaea Consultants and represent our best professional judgment. To that extent and within the limitation of project scope and budget, we believe the information provided herein is accurate and true to the best of our knowledge. Talasaea does not warrant any assumptions or conclusions not expressly made in this report, or based on information or analyses other than what is included herein.

#### 1.3 Qualifications

Field investigations and evaluations were conducted by Bill Shiels, Principal; Jennifer Marriott, PWS, Senior Ecologist; David R. Teesdale, PWS, Senior Wetland Ecologist; Richard Tveten, Senior Ecologist; and Kristen Numata, Ecologist. Bill Shiels has a Bachelor's Degree in Biology from Central Washington University and a Master's Degree in Biological Oceanography from the University of Alaska. He has over 35 years of experience in wetland delineations and mitigations. Jennifer Marriott has a Bachelor's Degree and a Master's Degree in Biology from University of Central Florida, and a second Master's Degree in Soil and Environmental Science from the University of Florida. She has over 13 years of experience in wetland delineations and environmental permitting. David Teesdale has a Bachelor's Degree in Biology from Grinnell College, Iowa, and a Master's Degree in Ecology from Illinois State University. He has 15 years of experience in wetland delineations and biological evaluations. Richard Tveten has a Bachelor of Science and Master of Science in Biology from

Western Washington University with a focus on terrestrial ecology and fire ecology, respectively. Richard has worked for the public and private sectors for 20 years in wetlands, water quality, and forest management. Kristen Numata has a Bachelor's Degree in Biology and Environmental Science from Santa Clara University.

#### **CHAPTER 2.PROPERTY DESCRIPTION**

#### 2.1 Property Location and Description

The Site is a combination of portions of six parcels currently owned by Federal Way Campus, LLC. The approximate address is 32901 Weyerhaeuser Way South in the City of Federal Way, Washington. The Site is approximately 146 acres in size. The remainder of the associated parcels under Federal Way Campus, LLC ownership are not a part of this project. The Public Land Survey System location of the Site is Sections 16 and 21, Township 21 North, Range 4 East, Willamette Meridian.

The topography of the main portion of the Site, west of Weyerhaeuser Way S, is gently sloping downhill from the north to the south. The properties east of Weyerhaeuser Way South slope eastward to North Lake. The Site is bound to the east by North Lake, South 336<sup>th</sup> Street to the south, and Interstate 5 abuts the western edge of the Site. An office park is located north of the Site. The previous Weyerhaeuser headquarters building is located south of the Site across from Weyerhaeuser Pond.

# 2.2 Existing Site Development

The Site is currently developed with the Weyerhaeuser Tech Center and associated infrastructure including six (6) parking lots, paved roads, gravel access roads and a private trail system that surrounds the building through the adjacent forested areas. A gas pipeline easement extends along the interstate frontage along the west edge of the property, and another gas pipeline extends from the office parcels north of the Site diagonally across the northeast corner of the Site. A stormwater pond is located southwest of the Tech Center and collects runoff from all of the roads and parking areas associated with the Tech Center. This pond discharges south into an artificial channel, now a naturalized stream, before ultimately discharging into Weyerhaeuser Pond.

#### 2.3 Historical Land Uses

The land at the north end of North Lake was historically developed as far back as the 1930s, based on accessible historical aerial photographs. The 1936 aerial photograph (<a href="www.historicaerials.org">www.historicaerials.org</a>) reflects docks present all along the eastern shore of North Lake as well as around the northwest corner of the lake, along the existing shoreline within the Site. The 1964 aerial photograph (<a href="www.historicaerials.org">www.historicaerials.org</a>) clearly shows a development of some kind that had multiple docks, buildings, and infrastructure. Evidence of wetland fill is noticeable between the 1936 and 1964 aerial photographs. This facility appears to have been abandoned around the time Weyerhaeuser purchased the property. The 1980 aerial photograph (<a href="www.historicaerials.com">www.historicaerials.com</a>) seems to show the area being left to vegetate naturally. The previously apparent docks along this section of shoreline are no longer present in current aerial imagery.

In addition to the old developments around North Lake, there is evidence of houses and residential areas along the old alignment of South 336<sup>th</sup> Street. These areas were maintained through the 1960s, but appear to be overgrown by 1969, and by 1980 this area was completely redeveloped as part of the Weyerhaeuser Campus construction.

#### **CHAPTER 3.METHODOLOGY**

The critical areas analysis of the Site involved a two-part effort. The first part consisted of a preliminary assessment of the Site and the immediate surrounding area using published environmental information. This information includes:

- 1) Wetland and soils information from resource agencies;
- 2) Critical Areas information from King County and the City of Federal Way;
- 3) Orthophotography and LIDAR imagery; and,
- 4) Relevant studies completed or ongoing in the vicinity of the Site.

The second part consisted of site investigations where direct observations and measurements of existing environmental conditions were made. Observations included plant communities, soils, hydrology, and stream conditions. This information was used to help characterize the site and define the limits of critical areas on-site and off-site for regulatory purposes (see **Section 3.2 – Field Investigation** below).

# 3.1 Background Data Reviewed

Background information from the following sources was reviewed prior to field investigations:

- US Fish and Wildlife Service (USFWS), Wetlands Online Mapper (National Wetlands Inventory, NWI) (USFWS, 2017) (www.wetlandsfws.er.usgs.gov/wtlnds/launch.html);
- Natural Resources Conservation Service (NRCS), Web Soil Survey (NRCS, 2017)(www.websoilsurvey.nrcs.usda.gov/app/);
- King County GIS Database (King County, 2017);
- Orthophotography from USDA's National Agricultural Imagery Program (NAIP 2017), Earth Explorer (USGS), and Google Earth.
- Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) Mapper;
- USFWS listed species data; and
- National Marine Fisheries Service (NMFS).

#### 3.2 Field Investigation

Talasaea Consultants originally evaluated the Site as part of a larger effort for Federal Way Campus, LLC beginning in December 2015. Talasaea re-verified the wetland boundaries in April 2016 once water levels returned to a normal state after the extremely high rains of December 2015. Brief site evaluations have been conducted since to verify that previously delineated boundaries are still appropriate. Wetland boundaries were evaluated by Ecological Science Associates (ESA) through the City of

Federal Way between April and June 2017 as part of a boundary line adjustment request.

Our wetland delineation utilized the routine approach described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Regions* (U.S. Army Corps of Engineers 2010).

Plant species were identified according to the taxonomy of Hitchcock and Cronquist (Hitchcock, et al. 1969). Taxonomic names were updated and plant wetland status was assigned according to *North American Digital Flora: National Wetland Plant List*, *Version 2.4.0* (Lichvar, et al. 2012). Wetland classes were determined with the U.S. Fish and Wildlife Service's system of wetland classification (Cowardin, et al. 1979). Vegetation was considered hydrophytic if greater than 50% of the dominant plant species had a wetland indicator status of facultative or wetter (i.e., facultative, facultative wetland, or obligate wetland).

Wetland hydrology was determined based on the presence of hydrologic indicators listed in the Corps' Regional Supplement. These indicators are separated into Primary Indicators and Secondary Indicators. To confirm the presence of wetland hydrology, one Primary Indicator or two Secondary Indicators must be demonstrated. Indicators of wetland hydrology may include, but are not necessarily limited to: drainage patterns, drift lines, sediment deposition, watermarks, stream gauge data and flood predictions, historical records, visual observation of saturated soils, and visual observation of inundation.

Soils on the site were considered hydric if one or more of the hydric soil indicators listed in the Corps Regional Supplement were present. Indicators include presence of organic soils, reduced, depleted, or gleyed soils, or redoximorphic features in association with reduced soils.

An evaluation of patterns of vegetation, soil, and hydrology was made along the interface of wetland and upland. Wetland boundary points were then determined from this information and marked with wire flags or surveyors tape. **Appendix A** contains data forms prepared by Talasaea for representative locations in both upland and wetland locations. These data forms document the vegetation, soils, and hydrology information that aided in the wetland boundary determination.

#### **CHAPTER 4.RESULTS**

This section describes the results of our in-house research and field investigations. For the purpose of this report, the term "vicinity" describes an area within 105 feet of the Site.

# 4.1 Analysis of Existing Information

The following sources provided information on site conditions based on data compiled from resource agencies and local government.

# 4.1.1 USGS Quadrangle

The Project Site occurs on the Poverty Bay quadrangle. No features are mapped on the property, however, the quad map indicates North Lake and Weyerhaeuser Pond in close proximity to the Site to the east and south, respectively. Wetlands are shown along the north shoreline of North Lake. No stream features are indicated on this map.

# **4.1.2 National Wetland Inventory**

The NWI maps a large wetland complex along the north shoreline of North Lake and a palustrine scrub-shrub/emergent, persistent, seasonally flooded wetland (PSS/EM1C) to the northwest of the Site (**Figure 2**). The large wetland complex is classified as a palustrine scrub-shrub/emergent, persistent, seasonally flooded (PSS/EMC) wetland adjacent to a palustrine emergent (persistent)/palustrine scrub-shrub, semi-permanently flooded (PEM1/SSF) wetland. One stream is mapped along the southern edge of the property flowing westbound, though this feature is not present in the field. No NWI wetlands are mapped within the Site.

#### 4.1.3 Natural Resources Conservation Service

The NRCS maps one type of soil over the majority of the Site, Alderwood gravelly sandy loam, 0 to 8 percent slopes (**Figure 3**). Alderwood gravelly sandy loam, 8-15% slopes is mapped over a small area in the northwest corner of the Site, while Orcas Peat is mapped over the far eastern portion of the Site near an existing wetland that is adjacent to North Lake. The National Technical Committee on Hydric Soils does not include Alderwood gravelly sandy loam as a hydric soil, though Orcas Peat is identified as a hydric soil.

# 4.1.4 King County GIS Database

King County does not map any critical areas on the Site, but both North Lake and Weyerhaeuser Pond are mapped as wetland units. One 2S stream is indicated as connecting North Lake and Weyerhaeuser Pond off-site.

#### 4.2 Analysis of Existing Conditions – Wetlands

The Site west of Weyerhaeuser Way South is currently developed with the former Weyerhaeuser Tech Center and associated infrastructure including parking and stormwater facilities. The buildings and infrastructure were constructed in 1978. Roughly half of the Site contains conifer/deciduous mixed forests, though the forested areas are separated by the roads, trails, and broadly-spaced parking configuration. The stormwater pond on-site collects runoff from much of the existing development, and conveys the treated water downstream through a man-made channel. The channel (identified as Stream AC) flows southward to its confluence with a perennial stream that connects North Lake to the Weyerhaeuser Pond (**Figure 4**).

North Lake abuts the eastern edge of the Site, and is a Shoreline of the State. The areas on the east side of Weyerhaeuser Way South are separated by an access road to a public boat ramp managed by WDFW. North of this boat ramp road are the northern limits of a large wetland complex that extends to North Lake, surrounded by a coniferous forest. A sewer line easement crosses this area and was replanted some time ago. South of the boat ramp road are portions of several wetlands that appear to

collect extra runoff from the roadside ditches associated with the boat ramp road through the winter months. Most of these wetlands are not directly associated with North Lake. The sewer line easement continues across this portion of the property as well.

Much of the Site is underlain by glacial till. This dense material frequently possesses inclusions consistent with redoximorphic features except they lack the diffuse boundaries characteristic of active wetland hydrology. This material is also very difficult to dig through for complete soil profiling. In addition, a number of non-native species of trees occur along the existing gravel roads, having been planted over the years. A large area immediately west and southwest of the Tech Center, identified on older maps as an "experimental tree farm," was completely cleared of the native conifers sometime between 1980 and 1990, and replanted primarily with European ash (*Fraxinus excelsior*) trees. This area has since regrown with the European ash being dominant is some areas, and the remainder dominated by a combination of black cottonwood and red alder with scattered Western red cedar. These areas coincide with the location of many of the delineated wetlands, which are small depressions in the landscape that are likely residual from the clearcutting effort of the 1980s.

Talasaea Consultants performed an initial delineation of on-site wetlands beginning in December 2015. Talasaea re-verified the wetland boundaries in April 2016 as the initial delineations were completed after several atypically high rainfall events. Sixty-three wetlands were identified on the Project Site (**Appendix E, Sheets W1.0-W1.2**). North Lake occurs adjacent to the Site. One man-made stream (Stream AC) connects the existing stormwater pond to Weyerhaeuser Pond off-site to the south. Several ditchouts and old log skid trails occur through the western woods on-site that hold water during the winter but neither convey water nor meet the wetland definition. The wetland labels are non-sequential as the wetlands were delineated as part of a larger effort.

A complete table outlining the wetland classification, size, and other information of all the wetlands can be found in **Appendix B**. General descriptions can be found below. Photographs of typical conditions within the wetlands, including typical uplands and access roads, are included within **Appendix C**. Wetlands outside of the Shoreline Management Zone (SMZ) have been rated using the *Washington State Wetland Rating System for Western Washington* (Ecology Publication # 14-06-029) (**Appendix D**). Wetlands occurring within the SMZ along North Lake were rated using the rating system outlined in the Federal Way Revised Code (FWRC) Chapter 15.10 *Critical Areas*.

# 4.2.1 Wetlands AE, AF and AH

Wetlands AE, AF, and AH are small, depressional palustrine emergent wetlands located south of the stormwater pond. Hydrology is provided seasonally by the stormwater pond through surface water and groundwater leakage from the pond, which collects runoff from the entire Weyerhaeuser Tech Center. Typical vegetation includes sedges and rushes, such as soft rush and slough sedge.

#### 4.2.2 Wetland AG

Wetland AG is a palustrine forested/scrub-shrub wetland located around the stormwater pond. This wetland occurs at the toe of the slope of the berm surrounding the stormwater pond, and it is likely that hydrology comes from groundwater seeping through the berm as well as surface water from the vicinity. This wetland extends south along either side of Stream AC, the artificial discharge of the stormwater pond. Typical vegetation is red alder, black cottonwood, and salmonberry.

#### 4.2.3 Wetlands Al, AL, AJ, AO, AR, AS, AM

These wetlands are a series of small slope and depressional wetlands that occur north of South 336<sup>th</sup> Street. These herbaceous wetlands are dominated by pasture grasses, typically a mix of rye (*Lolium* spp.), fescues (*Festuca* spp.), bentgrasses (*Agrostis* spp.), velvet grass (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*), and others.

#### 4.2.4 Wetland AV

Wetland AV is a medium sized wetland-upland mosaic located to the west of the Tech Center. Wetland AV is classified as a palustrine forested wetland. Typical species include red alder, salmonberry and creeping buttercup. This is part of an area that was planted with European ash, located in clear rows. This general area has poor drainage due to disturbance over the past few decades that has resulted in ponded water within small depressional pockets through these woods. Many of these pocket wetlands were delineated based on the presence of hydrology and hydric soils as the vegetation across a broad area is facultative.

#### 4.2.5 Wetland BA

Wetland BA is a relatively small depressional, forested wetland located adjacent to the boat ramp road. This wetland is partially located within the SMZ. This wetland receives run-off from the boat ramp road, and has a culvert that connects this to the Wetland CD complex on the east side of the boat ramp road. Typical vegetation includes red alder and salmonberry. This wetland is also topographically connected to Wetlands BA-2 and PK at high water levels common through the winter months, though this connection is generally not apparent outside of the winter rainy season.

#### **4.2.6 Wetland BA-2**

This small, depressional, shrubby wetland is dominated by salmonberry and other small wetland shrubs. This wetland was formerly part of a larger delineation for Wetland BA, however, after a thorough analysis of this larger area, it was determined that Wetlands BA and BA-2 represented the true wetland components that reflected all 3 parameters of a wetland. The other, discarded areas lacked hydric soils and/or sufficient, long-term hydrology that met the parameters to be considered wetlands. This wetland occurs outside of the SMZ.

#### 4.2.7 Wetland BB

This small, depressional, forested wetland is located adjacent to the boat ramp road, and falls within the SMZ. This wetland receives road run-off from the boat ramp road and drains south to Wetland BD North.

#### 4.2.8 Wetland BD-North

Wetland BD-North is a large lakeshore wetland associated with North Lake that occurs within the SMZ. The entirety of this wetland extends off-site to the north and to the south. This wetland is mostly forested and is dominated by red alder and salmonberry. Hydrology for Wetland BD-North is supported by the lake, surrounding uplands, and Weyerhaeuser Way South. During the winter site visits, water was observed sheet flowing across the gravel path upslope near Wetlands BE and BF before entering Wetland BD-North. Hydrology for these smaller wetlands appears driven by road runoff from Weyerhaeuser Way South.

#### 4.2.9 Wetland BE

Wetland BE is a small slope wetland located on the upslope side of a gravel road that separates Wetland BE from the lakeshore Wetland BD North. This wetland occurs within the SMZ. The dominant vegetation is salmonberry. Hydrology is generally provided by precipitation and shallow groundwater, and this wetland receives run-off from Weyerhaeuser Way South.

#### 4.2.10 Wetland BF

Wetland BF is a slope wetland located on the upslope side of a gravel road that separates Wetland BF from the lakeshore Wetland BD North. This wetland occurs within the SMZ. Dominant vegetation is red alder and salmonberry. Hydrology is generally provided by precipitation and shallow groundwater, and this wetland receives run-off from Weyerhaeuser Way South.

#### 4.2.11 Wetland BK

Wetland BK is a small palustrine scrub-shrub sloped wetland located between Weyerhaeuser Way South and North Lake. This wetland occurs within the SMZ. Vegetation is dominated by salmonberry. Hydrology is generally provided by precipitation and shallow groundwater, and this wetland receives run-off from Weyerhaeuser Way South.

#### 4.2.12 Wetland BL

Wetland BL is a medium palustrine scrub-shrub slope wetland located between Weyerhaeuser Way South and North Lake. This wetland occurs within the SMZ. Vegetation is dominated by salmonberry. Hydrology is supported by precipitation and shallow groundwater, and this wetland receives run-off from Weyerhaeuser Way South.

#### 4.2.13 Wetland BR

Wetland BR is a pocket of wetland located west of the stormwater pond. This wetland occurs at the edge of the forested area, immediately east of a gravel road that is used to access this portion of the Site. This wetland is a collection of small depressional pockets that contain soft rush and various sedges, with small areas of salmonberry and red elderberry. Western red cedar and red alder also occur within the wetland. Hydrology is generally provided through the interception of shallow ground water and precipitation. Some overland flow is likely provided from Wetland AG with higher rainfall or higher discharges from the stormwater pond.

#### 4.2.14 Wetland BS-North

Wetland BS-North is a palustrine forested wetland located in a depression between two parking lots north of the Tech Center. Vegetation within the wetland is dominated by salmonberry, tall manna grass, and soft rush with quaking aspen and red alder present as well. Hydrology for BS-North is supported by parking lot runoff and precipitation.

#### 4.2.15 Wetland BS-South

Wetland BS-South is a palustrine emergent wetland located off-site adjacent to Wetland BR. Vegetation is dominated by various grass species with hydrology supported by surface water flows and precipitation.

#### 4.2.16 Wetland CB

Wetland CB is a palustrine forested wetland located east of Weyerhaeuser Way South and north of the boat ramp road. Vegetation is dominated by red alder and Oregon ash. Hydrology is supported by precipitation, stormwater discharge from the office park stormwater pond off-site on the west side of Weyerhaeuser Way South, and a non-regulated swale that receives runoff from Weyerhaeuser Way South.

#### 4.2.17 Wetland CD

Wetland CD is a palustrine forested and scrub-shrub wetland located partially on-site east of Weyerhaeuser Way South north of the boat ramp road. The majority of this wetland occurs off-site along the east side of the boat ramp, and connects directly to North Lake. Vegetation is dominated by willows, red alder, and salmonberry. The off-site components of this wetland were not evaluated. Hydrology is supported by North Lake, overland flow from the surrounding areas, and precipitation.

#### 4.2.18 Wetland CE

This very small depression is located next to Weyerhaeuser Way South and was questionably considered wetland. However, due to an abundance of caution, this area was identified despite its likely presence as a result of a tree falling.

#### 4.2.19 Wetland CG

Wetland CG is located on the east side of Weyerhaeuser Way South and is a depressional pocket within the surrounding coniferous forest. This wetland connects to Wetlands BA, BA-2 and PK during periods of high water in the rainy season, though no long-term hydrologic connection is apparent between these wetlands. Wetland CG appears to be a remnant of past logging activities. No vegetation is dominant within this wetland as overall vegetative coverage is less than 20% total and is restricted to small shrubs on hummocks. A dense canopy cover is present due to the adjacent western red cedars, most of which occur outside of the wetland boundaries.

#### 4.2.20 Wetland DE

Wetland DE is a large palustrine forested wetland located west of the Tech Center. Vegetation within the wetland is dominated by European ash, soft rush, a variety of sedges and facultative grasses. Hydrology for Wetland DE is provided by precipitation and interception of surface flows. This is part of an area that was planted as part of the Weyerhaeuser Campus experimental tree farm with European ash, located in clear

rows. This general area has poor drainage due to disturbance over the past few decades that has resulted in ponded water within small depressional pockets through these woods. Consolidated till generally occurs near the soil surface which precludes the downward movement of water.

#### 4.2.21 Wetlands DF, DG, DH, and DI

Wetlands DF, DG, DH, and DI are a series of wetlands located within the woods between Wetland DE and the Tech Center. These wetlands are classified as palustrine forested, and are dominated by black cottonwood, European ash, Douglas spirea, salmonberry, and Dewey's sedge. Hydrology for these wetlands is provided by precipitation and interception of surface flows. This is part of an area that was planted as part of the former Weyerhaeuser Campus experimental tree farm with European ash, located in clear rows. This general area has poor drainage due to disturbance over the past few decades that has resulted in ponded water within small depressional pockets through these woods. Consolidated till near the soil surface severely restricts the downward movement of water.

#### 4.2.22 Wetland DK

Wetland DK is a palustrine scrub-shrub wetland located west of the Tech Center. This wetland is generally dominated by small patches of wetland grasses, sedges, and rushes with trees occurring within proximity to the wetland, but not within the wetland. Hydrology for this wetland is provided by precipitation and interception of surface flows. This is part of an area that was planted as part of the former Weyerhaeuser Campus experimental tree farm with European ash, located in clear rows. This general area has poor drainage due to disturbance over the past few decades that has resulted in ponded water within small depressional pockets through these woods. Consolidated till near the soil surface severely restricts the downward movement of water.

#### 4.2.23 Wetland El

Wetland EI is a small palustrine forested wetland located northwest of the Tech Center. Vegetation within the wetland is dominated by salmonberry and ruffled starwort. Soils were hydric, and hydrology for this wetland is provided by precipitation and interception of surface flows.

#### 4.2.24 Wetlands EJ, EK, EL, and EM

Wetlands EJ, EK, EL, and EM are a cluster of wetlands located northwest of the Tech Center. These wetlands are located within an area dominated by deciduous tree species, the conifers have been logged out years ago. These wetlands are classified as palustrine scrub-shrub and are dominated by salmonberry. Hydrology for Wetlands EJ, EK, EL and EM is provided by precipitation and interception of surface flows. The wetland boundaries were delineated based on the presence of wetland hydrology and hydric soils since many species in the area were facultative wetland species.

#### 4.2.25 Wetland FA

Wetland FA is a palustrine scrub-shrub wetland located along the northern property line. The majority of this wetland occurs off-site to the north. Vegetation within the wetland is

dominated by red alder and salmonberry. Hydrology for FA is provided through precipitation and interception of surface flows.

#### 4.2.26 Wetland FB

Wetland FB is a palustrine scrub-shrub wetland located along the northern property line in the northeast corner of the property. Vegetation within the wetland is dominated by young Oregon ash and salmonberry. Hydrology for FB is provided through precipitation and interception of surface flows.

#### 4.2.27 Wetland FD

Wetland FD is a palustrine forested wetland located north of the Tech Center that abuts a pipeline right-of-way. This wetland resulted from the impoundment of water behind a berm created through the installation of a pipeline across this area. Hydrology for FD is provided through precipitation and interception of surface flows.

#### 4.2.28 Wetland FE

Wetland FE is a palustrine forested wetland located north of the Tech Center by the outdoor volleyball court, adjacent to a gravel road. Portions of this wetland appear to have been artificially excavated, and given the location of this feature near the highest point across the Site, this wetland formed through the impoundment of water because the gravel road acts as a berm. Vegetation within the wetland includes red alder, salmonberry, and creeping buttercup. Hydrology for FE is provided through precipitation and interception of surface flows.

#### 4.2.29 Wetland FF

Wetland FF is a palustrine scrub-shrub wetland located north of the Tech Center. This wetland resulted from the impoundment of water behind a berm created through the installation of a pipeline across this area. Vegetation within the wetland is dominated by red alder, salmonberry, and lady fern. Hydrology for FF is provided through precipitation and interception of surface flows.

#### 4.2.30 Wetland GB-North

Wetland GB-North is a palustrine scrub-shrub wetland located west of the Tech Center. Vegetation within the wetland is dominated by red-osier dogwood and reed canarygrass. Hydrology for GB-North is provided through precipitation and interception of surface flows.

#### 4.2.31 Wetland IA

Wetland IA is a slope wetland located in the southwest corner of the Site. This wetland intercepts surface water and shallow subsurface flows from the adjacent hillslopes and conveys the water to a culvert under South 336<sup>th</sup> Street. This water ultimately flows into Weyerhaeuser Pond. The wetland is dominated by a variety of grasses and sedges. Saturated soil conditions were observed throughout winter and early spring with hydric soil indicators present.

# 4.2.32 Wetlands KA, KB, KC, KD, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KT, KU, KV, KW

These wetlands are a series of small slope and depressional wetlands that occur north of South 336<sup>th</sup> Street. These herbaceous wetlands are dominated by pasture grasses, typically a mix of rye (*Lolium* spp.), fescues (*Festuca* spp.), bentgrasses (*Agrostis* spp.), velvet grass (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*), and others.

# 4.2.33 Wetland PG (Previously identified as Wetland BJ)

Wetland PG is a large wetland located in the southeastern corner of the site between Weyerhaeuser Way S and North Lake. This wetland is classified as both a palustrine forested and scrub-shrub sloped wetland. The delineation for Wetland PG shrunk after spring evaluations of the area during more normal rainfall patterns. Wetland PG is dominated by red alder and salmonberry.

#### 4.2.34 Wetland PK

Wetland PK is part of the former larger delineation of Wetland BA, and is a small forested wetland within a more recently disturbed area. This wetland occurs within an area that lacks the conifer canopy common through much of this portion of the Site. The areas within and around Wetland PK are dominated by red alder and other deciduous trees that are generally younger than the surrounding conifers.

# 4.3 Analysis of Existing Conditions – Streams and Other Features

No natural streams occur within the Site, though a stream connecting North Lake to Weyerhaeuser Pond occurs off-site to the south. A number of man-made depressional features occur across the landscape that neither convey water nor meet the definition of a wetland. These features appear to be remnants from when this forest was logged in the 1980s shortly after the construction of the Tech Center. Some of the features were likely dug for surface water management to ensure the gravel paths through the woods remained free from ponded water. These features rarely connect to wetlands, but where they did, they were delineated as part of the wetland where appropriate.

Many of the ditches and swales connect to the on-site stormwater facility in some fashion, either through direct surface connections or via the pipes that drain the roads and parking areas to the on-site stormwater pond. This stormwater pond then discharges through a man-made conveyance (Stream AC) that ultimately flows into Weyerhaeuser Pond through a connection to a natural stream. The combined streams flow for approximately 600 feet before entering the Weyerhaeuser Pond. The Weyerhaeuser Pond then discharges south through a control structure into a buried pipe that is located underneath the former Weyerhaeuser Headquarters Building. The flows from this stormwater pond and associated channel ultimately enter the Hylebos Creek several miles south of the Site (**Figure 4**).

#### 4.3.1 North Lake

North Lake is a Shoreline of the State and is located adjacent to the northeast parcels within the Property. This 50-acre lake is periodically stocked with rainbow trout by WDFW, and has a resident largemouth bass population that is maintained for fishing.

While no motorized boats are allowed on this lake, there is a dock at the north end at the WDFW maintained access point.

# 4.3.2 Weyerhaeuser Pond (off-site)

Weyerhaeuser Pond was constructed in conjunction with the former Weyerhaeuser Headquarters building. Weyerhaeuser Pond is located off-site to the south, but is the receiving body for some of the Site stormwater. This pond serves both as a stormwater pond and natural feature that attracts waterfowl and other wildlife. Weyerhaeuser pond does collect runoff from the surrounding areas, as well as from the North Lake. This man-made pond is not a Shoreline of the State. A control structure at the south end of the pond limits the flows out of this pond. A pipe conveys flows out of the pond, underneath the Headquarters building, through the meadow immediately south of the building, before discharging at a headwall located south of the Weyerhaeuser Road, north of Highway 18.

#### 4.3.3 Stream AC

A stormwater pond for the Tech Center, located north of the Headquarters building, collects runoff from approximately 2/3 of the Tech Center and surrounding areas. This stormwater pond conveys the treated water downstream through a man-made channel (Stream AC) that extends into the Property before flowing south under South 336<sup>th</sup> Street to its confluence with Stream HA. The combined streams flow for approximately 600 feet before entering Weyerhaeuser Pond. Weyerhaeuser Pond then discharges south through a structure into a buried pipe that is located underneath the Headquarters building. The flows from this series of streams ultimately enter the Hylebos Creek some two (2) miles south of the Property.

This conveyance feature, identified as Stream AC for the purposes of this report, has not been maintained over the years and has become more naturalized, despite the primary source of flow being the stormwater pond discharge. Stream AC starts at the stormwater pond outlet, but also collects water from the adjacent wetlands. The flow regime of this stream is directly tied to the discharges from the stormwater pond. While this feature was artificially created, its connection to fish-bearing waters and naturalization over time ensures that this feature has at least the potential to sustain fish habitat.

#### 4.3.4 Non-regulated Ditches

Several ditches and swales have been constructed and are actively maintained across the Property that tie into natural features. A pair of swales (AT1 and AT2) convey water from the sewer line easement north of South 336<sup>th</sup> Street south to a culvert under South 336<sup>th</sup> Street, before discharging these waters into Weyerhaeuser Pond.

#### **CHAPTER 5. WILDLIFE AND LISTED SPECIES**

#### 5.1 Wildlife Surveys and Assessments

The Site was evaluated for wildlife habitat and observations of wildlife were recorded during all field visits since December 2015. The general habitat on-site is a blend of small depressional wetlands, 3<sup>rd</sup> growth Douglas fir forest with a patchy salal/sword fern understory, and a mixed deciduous forest with a primarily salmonberry understory. An

existing stormwater pond occurs adjacent to several wetlands near the west side of the Site, and a naturalized stream originating from the stormwater pond discharge also occurs on-site. North Lake occurs adjacent to the eastern most portion of the project area. No unique habitats occur on-site. Both North Lake and Stream AC have potential habitat for salmonids and other freshwater fish. Both features provide fish habitat at a minimum. Though no fish of any species were observed within Stream AC, North Lake is regularly stocked with rainbow trout, and presumably has many other fish species present. Listed species evaluated for effects include the listed salmonids (Chinook salmon, stealhead, bull trout) to address the potential for downstream water quality impacts.

General wildlife observations during field work include: American Robin, Pacific Wren, Canada Goose, Chickadee, Ruby-crowned Kinglet, Red-winged Blackbird, Pileated Woodpecker, Bufflehead, Mallard, American Widgeon, American Crow, American Coot, Pied-billed Grebe, Rufous Hummingbird, mountain beaver (burrows), rabbit, deer, coyote, and bullfrogs.

#### 5.2 Listed Species

There are no known listed species occurring on or adjacent to the Site. Listed species (salmonids) do occur downstream in Hylebos Creek, and a bald eagle nest is located more than 1,000 feet SE of North Lake. While bald eagles likely use North Lake for foraging, no direct impacts are proposed to North Lake. Any stormwater discharges would be treated prior to being discharged into North Lake or into downstream waterbodies. North Lake is stocked with rainbow trout. Weyerhaeuser Pond off-site to the south of the Site may also be used by bald eagles for foraging, but this pond has previously been recognized as a large stormwater facility that acts as detention and treatment. Salmonids have not been observed in any of the streams, lake or pond within the greater Federal Way Campus, LLC property. The apparent hindrances restricting salmonid migration into this area appear to be several not-fish-accessible culverts downstream. There is also a long stretch of pipe (roughly 1,600 linear feet) from the Weyerhaeuser pond, under the former Weyerhaeuser headquarters building, to its outlet just north of Highway 18, that is likely problematic for fish passage.

The potential for federally or state listed species occurring within the Site is very low. North Lake and the associated streams have the capacity for salmonids to occur, though accessibility from Hylebos Creek is artificially restricted. North Lake is stocked with rainbow trout, at a minimum. While no salmon species have been observed within North Lake or associated streams that does not preclude the potential for their presence. No impacts within the ordinary high water mark for any stream or lake is proposed as part of this project, though maintenance of an existing stormwater structure will be necessary. All stormwater will be treated prior to discharge and conveyance into a fish-bearing water.

#### **CHAPTER 6.REGULATORY REVIEW**

# 6.1 Federal and State Regulations

Wetland impacts on the project site are subject to applicable State and Federal regulations. Wetland impacts are regulated on the Federal level by Sections 404 and 401 of the Clean Water Act. The US Army Corps of Engineers is responsible for administering compliance with Section 404 via the issuance of Nationwide or Individual Permits for any fill or dredging activities within wetlands. Any project that is subject to Section 404 permitting is also subject to requirements of Section 401 of the Clean Water Act (CWA), administered by the Department of Ecology (DOE). Because direct wetland impacts are proposed on the project site, the project would be required to comply with all Section 404 and 401 permitting requirements prior to any construction-related activities that would affect "waters of the US."

The project is being evaluated by the Corps for a Nationwide Permit 39.

# 6.2 City of Federal Way Zoning Code

Wetlands and other critical areas in Federal Way located outside of the Shoreline Management Zone (SMZ) are regulated under the Federal Way Revised Code (FWRC) Chapter 19.145. Wetlands identified within the Shoreline Management Zone are addressed under FWRC Chapter 15.10.

#### 6.2.1 Non-SMZ Wetlands

Wetlands occurring outside of the SMZ in Federal Way are currently regulated under FWRC 19.145.420. Wetlands regulated under Chapter 19 of the FWRC should be rated using the *Washington State Wetlands Rating System for Western Washington* (2014). The ratings for wetlands determine the appropriate buffer width requirements as specified in the Federal Way Revised Code. Wetland ratings and rating figures can be found in **Appendix D**.

Wetlands identified within the Site, but outside of the SMZ, typically rated as a Category III or IV with Habitat Scores ranging from three (3) to six (6). Wetland setbacks in the FWRC are determined first by Category and then by Habitat Score (**Table 1**). See **Appendix B** for wetland ratings, categories, and standard buffer for all critical areas.

Table 1. FWRC Wetland Buffer Requirements (FWRC 19.145.420)

Wetland Category	Wetland Buffer Width (based on Habitat Score)			
	3-4	5	6-7	8-9
Category I: Bogs and wetlands of high conservation value	190 feet	190 feet	190 feet	225 feet
Category I: Forested and based on function score	75 feet	105 feet	165 feet	225 feet
Category II	75 feet	105 feet	165 feet	225 feet
Category III	60 feet	105 feet	165 feet	225 feet
Category IV	40 feet	40 feet	40 feet	40 feet

#### 6.2.2 Streams

Stream AC is classified as a fish-bearing Type F stream. Type F streams under FWRC Chapter 19.145.270 require a 100-foot standard buffer. No other streams occur within the Site that would require buffers.

# 6.3 Shoreline Management Zone (SMZ)

North Lake is listed as a Shoreline of the State, and thus is located within the SMZ for the Department of Ecology and the City of Federal Way. Shorelands extend for 200 feet from the ordinary high water mark (OHWM) for North Lake and include Wetlands BA, BB, BD-North, BE, BF, BK, BL and CD. In addition to a 50-foot lakeshore buffer, these areas along the shoreline of North Lake have extra protections under the SMZ, which require additional coordination for any modifications within this area.

Wetlands identified within the Shoreline Management Zone are rated under FWRC Chapter 15.10.250. Instead of a formal rating system, wetlands must meet certain criteria to be classified as either a Category I, Category II, or Category III wetland. Category I wetlands require a 200-foot buffer, while Category II wetlands require a 100-foot buffer. Category III wetlands greater than 10,000 sf require a 50-foot buffer, and wetlands between 2,500 and 10,000 sf require a 25-foot buffer. Category III wetlands smaller than 2,500 sf do not require a buffer under FWRC. See **Appendix B** for wetland rating, category, and standard buffer.

#### 6.4 Other Linear Features

All other man-made depressional features would not require buffers as they are all non-jurisdictional features.

#### **CHAPTER 7. PROPOSED PROJECT**

#### 7.1 Proposed Project

The Applicant proposes to construct approximately 1,068,000 square feet of new warehouse and office space divided amongst three new buildings. The Weyerhaeuser Tech Center will remain, but the existing parking lots will be reconfigured to a more compact arrangement around the Tech Center to maximize space. Associated infrastructure to be constructed includes five (5) new stormwater detention facilities, including reconfiguring the existing stormwater pond, parking for both cars and trucks, and enough maneuvering space for the truck traffic anticipated around these buildings.

Portions of 63 wetlands, one (1) stream, and North Lake are located on or adjacent to the site. Construction of the proposed development would directly impact (fill) 13,428 square feet (0.31-acre) of wetlands for the buildings, parking, and stormwater facilities. Four wetlands will be insufficiently buffered, resulting in an additional 4,912 square feet (0.11-acre) of wetland as being considered indirect wetland impacts due to site development encroachments (**Appendix E, Sheets W1.3-1.4**).

No impacts are proposed within the ordinary high water mark of the on-site stream. While no work is proposed within the ordinary high water mark of the stream, work is proposed in proximity to the stream channel to construct new pond outfalls into the

stream buffer. The existing structure will need to be relocated. The east bank stream buffer is proposed to be reduced by 25%, with replacement buffer provided adjacent to the buffer on the west side of the stream. Additionally, the remaining stream buffer on both banks will be vegetatively enhanced through the plantings of native trees and shrubs. No development activities are proposed on or adjacent to North Lake. Wetland creation will occur north of North Lake around existing wetlands.

#### 7.2 Stormwater Treatment

Five (5) stormwater ponds (Ponds 1 -5) are currently proposed to address stormwater treatment and detention needs for this Project for the five basins located within the Project Area. A brief description of the stormwater components of this Project are outlined below, though a more in-depth discussion is provided within the Engineering documents.

Pond 1 is proposed on the east side of Weyerhaeuser Way South and is designed to handle the existing basin that discharges to North Lake, rather than to Weyerhaeuser Pond like the remainder of the Site. Pond 1 will handle detention only as the incoming water is only coming from standard parking areas, landscaped areas, and a portion of one building. Basic water quality treatment will be provided through the use of Modular Wetlands filter vault or the approved equivalent. This pond will discharge into the wetland creation area proposed within the Site between Weyerhaeuser Way South and North Lake in order to hydrate the wetland creation areas.

Ponds 2-5 are located around the western boundaries of the Project Site. One of the ponds (Pond 4) is a reconfiguration of the existing stormwater pond, while the other 3 are new ponds.

Ponds 2, 4, and 5 will handle water quality and detention. Modular Wetlands filter vaults, or the approved equivalent, will provide the required two train enhanced water quality treatment. Pond 3 is detention only and will receive clean roof runoff only. Drainage from these four ponds will all ultimately collect within Stream AC and will be conveyed to Weyerhaeuser Pond, consistent with the current condition for most runoff from this developed portion of the Site. We assume that any discharges from our Site will reach ambient temperatures before this water is discharged into a fish-bearing water.

The stormwater facilities will be designed to meet current DOE Water Quality Standards. The project will meet or exceed the current stormwater standards, and will be using the 2016 King County Stormwater Manual. The discharge from the proposed permanent stormwater detention ponds will be designed to meet existing, predevelopment conditions.

An approved National Pollutant Discharge Elimination System (NPDES) and Temporary Erosion and Sediment Control Plan (TESCP) and/or Storm Water Pollution Prevention Plan (SWPPP) will be in place prior to the start of construction and will remain in place throughout all earthmoving activities. The following BMPs are proposed in the Stormwater Pollution Prevention Plan (SWPPP): silt fence and native growth protection

fence (possibly combined into just orange silt fence), stake and wire fence (around dripline of trees to be retained), stabilized construction entrance, two temporary sedimentation ponds, storm drain inlet protection (for existing and proposed open lid catch basins), temporary and permanent seeding, mulching, sodding, dust control, straw waddles, interceptor dike and swales, as well as outlet protection. Other measures may be implemented as deemed appropriate for the site conditions and/or as directed by City inspectors.

#### **CHAPTER 8. IMPACT ANALYSIS**

The proposed site plan has been designed to minimize impacts to critical areas to the greatest extent practicable while meeting the criteria for development of a viable project and conforming to the City of Federal Way standards. In attempting to avoid wetland impacts on this site, several different configurations were evaluated to find the best fit for the project needs. Despite these efforts, some impacts to critical areas are unavoidable in order to achieve an economically viable project.

Portions of 63 wetlands, one (1) stream, and North Lake are located on or adjacent to the site. Construction of the proposed development would directly impact (fill) 13,428 square feet (0.31-acre) of wetlands for the buildings, parking, and stormwater facilities. Four wetlands will be insufficiently buffered, resulting in an additional 4,912 square feet (0.11-acre) of wetland as being considered indirect wetland impacts due to site development encroachments (**Appendix E, Sheets W1.3-1.4**).

No impacts are proposed within the ordinary high water mark of the on-site stream. While no work is proposed within the ordinary high water mark of the stream, work is proposed in proximity to the stream channel to construct new pond outfalls into the stream buffer. The existing structure will need to be relocated. The east bank stream buffer is proposed to be reduced by 25%, with replacement buffer provided adjacent to the buffer on the west side of the stream. No development activities are proposed on or adjacent to North Lake.

#### 8.1 Wetland Impacts

All of Wetlands BS-North, EI, EJ, EK, EL, EM, FD, FE, and FF are proposed to be filled for the construction of the buildings and associated parking (**Table 2**). Partial fill of Wetlands AG and DE are proposed to be filled for the construction of buildings. Wetlands AE, AH, and CG are proposed to be filled for the construction of stormwater ponds. The remaining wetlands will be retained in their current conditions. All of the wetlands proposed to be impacted are low quality, depressional features that mostly appear to have developed over the past several decades as a result of poor land management practices by the previous property owner. Proposed wetland fill totals 13,428 square feet (0.31-acre).

Small portions of Wetlands AG, AV, DE, and GB-North will be insufficiently buffered due to the proposed development, and thus will not be able to have full standard buffers (**Table 2**). Where portions of the wetland were insufficiently buffered, these were

considered indirect impacts and were included within the mitigation plan as if these areas were filled. Indirect impacts comprise another 4,912 square feet (0.11-acre).

**Table 2. Summary of Wetland Impacts** 

	2014 DOE Rating		Wetland Impac			Wetland Impact			
Wetland ID	Category	Wetland Size (square feet)	Impact Type - Direct (D) Indirect (I)	Reason for Impact	Square Feet	Acreage*	Wetland Remaining (square feet)		
AE	III	239	D	Pond	239	0.005	0		
AG	III	6 207	D	Building	2,266	0.052	4,131		
AG	111	6,397	I		557	0.013			
AH	III	712	D	Pond	711	0.016	1		
AV	III	12,332	- 1		378	0.009	12,332		
BS (N)	≡	2,683	D	Building	2,683	0.062	0		
CG	≡	3,458	D	Pond	3,458	0.079	0		
DE	III	21,554	D	Building	820	0.019	20,734		
DE		21,554			3,959	0.091			
EI	IV	175	D	Building	175	0.004	0		
EJ	III	231	D	Building	231	0.005	0		
EK	III	179	D	Building	179	0.004	0		
EL	III	372	D	Building	372	0.009	0		
EM	III	306	D	Building	306	0.007	0		
FD	IV	686	D	Building	686	0.016	0		
FE	III	324	D	Building	324	0.007	0		
FF	IV	978	D	Building	978	0.022	0		
GB (N)	III	3,377	ı		18	0.000	3,377		
Total Direct Fill Impacts				13,428	0.308				
	Total Indirect Impacts				4,912	0.113			
Total	Impacts - Di	rect and Ind	lirect		18,340	0.421			

<sup>\*</sup>Acreage is a rounded number calculated based on square footage.

# 8.2 Temporary Construction Impacts

Temporary construction impacts are proposed to 20,498 square feet of wetland buffer on-site to accommodate site grading, as well as an additional 35,689 square feet of pre-existing maintenance roads that are currently located within buffers. Any critical area buffer identified as a temporary buffer impact due to grading will be restored post-construction with native woody tree and shrub species, and will be included within the overall mitigation plan for monitoring and maintenance.

## 8.3 Stream Impacts

The buffer on the east side of Stream AC is proposed to be reduced by 25% to 75-feet to accommodate a stormwater detention facility at the southern end of the Site and a small area of building footprint. This buffer reduction totals 12,543 square feet (0.29-acre). This buffer reduction is consistent with what is allowed through current code. The stormwater outfall which currently provides hydrology to Stream AC will be relocated to the south, but water will still enter into Stream AC. Additional hydrology from clean rooftop runoff and other stormwater ponds will be discharged into the north end of Wetland AG and Stream AC to maintain hydrology within these areas that currently get water from the existing stormwater pond.

# 8.4 Mitigation Sequencing

All agencies involved require that a sequence of actions be taken for proposals that will impact wetlands. This is referred to as mitigation sequencing. It is administered under the Washington State Environmental Policy Act (SEPA) administered by DOE, as well as under Section 404 of the Federal Clean Water Act, administered by the Corps. The mitigation sequencing requirements are:

- 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 the 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.
- 6. Monitoring the hazard or other required mitigation and taking remedial action when necessary.

During the site planning process, every effort was undertaken to avoid and minimize adverse impacts to critical areas to the maximum extent practicable while still allowing for an economically viable development and conforming to City of Federal Way zoning requirements. However, warehouses have large rectangular footprints that do not lend themselves well to avoiding features. The size and exact locations of the buildings has been adjusted to the greatest extent practicable to minimize wetland impacts.

All of the proposed wetland impacts are necessary in order to meet the requirements for building, parking, stormwater facilities, and access for emergency services and trucks. The proposed development plan avoids impacting the largest and best quality of the wetlands. The majority of the wetlands to be filled are generally low-quality depressional systems that appear to have been created by poor land management activities in the last few decades and in conjunction with development over the years in adjacent areas. Every effort was taken to avoid wetlands that rated as higher quality, higher functioning wetlands.

# 8.5 Mitigation Analysis

The 1990 Memorandum of Agreement between the Environmental Protection Agency and the Corps establishes a three part process of mitigation sequencing to help guide mitigation decisions and determine the type and level of mitigation required to comply with Section 404 of the Clean Water Act. Two additional steps are included to ensure that mitigation projects successfully achieve the design goal of no net loss of wetland functions and services. These steps are listed below in order or preference. The mitigation analysis guidelines are listed below, followed by a discussion (in italic text) of how the proposed project meets each criterion.

i. Avoiding the impact altogether by not taking a certain action or parts of an action:

The project cannot avoid impacts to wetlands by avoiding certain actions or parts of actions and still have a viable project. The large, rectangular footprint of the warehouses precludes any creative site planning that might avoid centrally located wetlands. Additionally, necessary project components such as parking, road, landscaping, and stormwater requirements take up additional project area.

All of the wetlands proposed to be impacted are low quality, depressional features that mostly appear to have developed over the past several decades as a result of poor land management practices by the previous property owner. Large tracts of wetland will remain in the post-development condition. No impacts are proposed to the stream or North Lake.

ii. 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;

The Greenline Business Park project has been designed to minimize impacts to wetlands and streams to the maximum extent practicable while maintaining a developable area suitable for a viable warehouse distribution project. The size and scope of the necessary building space, infrastructure, and stormwater needs precludes much variability with avoiding wetland and stream impacts. Every effort was taken to avoid higher quality wetlands, and focus the necessary critical area impacts to those lower functioning wetlands. Several site plan reiterations were evaluated to balance the needs of the Project against the constraints of the Site.

iii. Rectifying the impact to the critical area by repairing, rehabilitating, or restoring the affected environment to the conditions existing at the time of the initiation of the project;

The majority of the affected environment will not be able to be re-established, rehabilitated, or restored, nor are impacts to uplands generally regulated that would require such rehabilitation or restoration. The identified wetland impacts

on the site will be permanent and compensatory mitigation will be provided to offset those impacts. Opportunities do exist to enhance the remaining critical areas on-site through buffer enhancement and restoration, though the majority of the compensatory mitigation will occur within the eastern portion of the Site near North Lake. Changes to the stormwater outfall should have no impact on the hydrology of Stream AC as additional sources of hydrology will be provided to ensure the upper limits of Stream AC and Wetland AG are hydrated. Opportunities to re-establish, rehabilitate, or restore buffer around the Site will be taken where available. Portions of the stream buffer will be restored further downstream, wherever feasible, and small areas of buffer restoration are anticipated where existing trails will be removed.

# iv. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

Permanent impacts to critical areas cannot be reduced or eliminated over time. However, those critical areas that will remain in proximity to the new development will be protected over time through maintenance of their buffers and ensuring the boundaries are clearly demarcated to prevent human intrusions.

Mitigation activities include wetland creation and enhancement and buffer enhancement and restoration. These improvements will be monitored for a minimum of 5 years with maintenance activities continuing beyond this time. These areas are expected to function as a native system and long-term maintenance is expected to be minimal. The stormwater facilities will be maintained as needed in the long-term.

# v. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.

The Project proposes to compensate for wetland impacts by creating wetlands adjacent to existing wetlands, further outlined in **Chapter 9** below. Additionally, proposed buffer restoration and enhancement on the Site will provide ecological benefits to the adjacent critical areas. Temporary impacts due to construction activities will be restored after construction to their pre-construction condition. Additionally, stream buffer enhancement is proposed adjacent to Stream AC within areas currently maintained as grassy fields.

# vi. Monitoring the hazard or other required mitigation and taking remedial action when necessary.

The proposed on-site mitigation requires a performance monitoring and maintenance program for a minimum of 5 years for the proposed wetland creation and buffer enhancement/restoration. The monitoring and maintenance plan will include goals and objectives for the mitigation plan, success criteria for which the mitigation will be assessed, a contingency plan in case of failure, and proof of a written contract with a qualified professional who will perform the

monitoring program. The monitoring program requires at least two (2) site visits per year by a qualified professional, with annual progress reports submitted to the Planning Official and all other agencies with jurisdiction.

# 8.6 Indirect Wetland Impact Analysis

Wetlands in Washington State, Volume 2: Guidance for Protecting and Managing Wetlands (2005, Ecology Publication #05-06-008) identifies four (4) primary factors that should be considered when determining an appropriate buffer width:

- Quality, sensitivity, and functions of the aquatic resource;
- Nature of adjacent land use activity and its potential for impacts on the aquatic resource;
- Character of the existing buffer area (including soils, slope, vegetation, etc.); and
- Intended functions of the buffer.

The below discussion outlines the existing and proposed conditions for the four wetlands anticipated to be indirectly impacted. In addition to this comparison and discussion of the impacted buffers, the portions of the wetlands identified as insufficiently buffered will be mitigated for, as if they were filled. This will ensure that the potential functions of these wetlands that are lost through the development will be thoroughly compensated.

# 8.6.1 Quality, sensitivity, and functions of the aquatic resource

The aquatic resources of concern are Wetlands AG, AV, DE, and GB-North. These wetlands appear to have been inadvertently created through human disturbances.

Wetland AG occurs at the toe of slope of the berm around the existing stormwater pond, and it appears to receive hydrology via seepage from the pond through the berm, as well as through interception of surface and subsurface flows from the surrounding uplands. Species diversity within the wetland is low with typical plant species including salmonberry with red alder. Almost no herbaceous vegetation occurs within the wetland. Wetland AG wraps around the base of the stormwater pond berm, and Stream AC begins around the central portion of the wetland, where the existing stormwater pond outfall is located. The stormwater pond outfall greatly increases the baseflow and hydrology to Wetland AG.

Wetland DE occurs over an area that was clear-cut back in the 1980s and 1990s, and where European ash was replanted. These ash trees are non-native, and are planted in very clear rows. Wetland AV occurs within an area that is surrounded by roads on 3 sides causing water ponding before exiting into the existing stormwater system. Wetlands AV and DE occur where soil conditions and drainage are poor, a direct result of the unconsolidated till near the soil surface. As many of the plants within these areas were facultative, a

combination of soils and hydrology were the determining factors for establishing wetland boundaries.

Wetland GB-North is located adjacent to a gravel road near Wetland DE. Wetland GB-North is a linear, depressional area that likely resulted from the former land use activities on this property. This is not a natural wetland system that holds water within the winter/spring months and, as a result, hydrophytic vegetation has thrived within this feature.

Wetlands AG, AV, DE, and GB-North are not unique systems nor sensitive systems, but rather are low-quality wetlands that generally only function for water quality and water storage. These wetlands do provide limited opportunities for habitat features for commonly occurring species, but do not provide habitat for any listed species. While none of these wetlands are near an open body of water, Stream AC does enter Wetland AG just south of the proposed direct impacts.

No wildlife was observed using these wetlands directly, though bullfrogs were identified within Stream AC near Wetland AG. Several species of songbird were observed across the Site. Mountain beaver holes were observed at several locations nearer the Douglas fir on-site, and a coyote was observed on-site. There is a known coyote den off-site to the south and west of the Site near the rhododendron garden (approximately 3,000 feet from the subject wetland).

# 8.6.2 Nature of adjacent land use activity and its potential for impacts on the aquatic resource

The area in and around the Project Site is zoned as Commercial Park (CP-1), and allows for corporate offices, research facilities, warehousing and distribution, production and light assembly of goods, etc. While there are large areas of undeveloped land in proximity to the Site, all of this land has the potential to be developed into land uses consistent with the CP-1 zoning. The adjacent areas to the north are already developed as office park, as well as the existing Tech Center on-site. The proposed Project is within the parameters of the current zoning for the Site. Full buffers are being provided around all non-impacted critical areas, or appropriate compensation to off-set any lost functions. The remaining buffers will protect these remaining wetlands from future human intrusions, as will the removal of the gravel road that occurs in close proximity.

# 8.6.3 Character of the existing buffer area (including soils, slope, vegetation, etc.)

The existing buffer adjacent to Wetland AG is a mix of a native trees and shrubs. Typical species present within the understory include salmonberry, and young red alder. The canopy is primarily red alder and black cottonwood with some western red cedar present. Douglas fir are present at the higher (drier) elevations on the site. Consolidated till occurs typically at fairly shallow depths throughout this area. Wetland AG is located around the base of the berm around

the existing stormwater pond. There is a gravel path along the top of this berm, as well as gravel trails in close proximity to Wetland AG. The northeast most point of Wetland AG is located at the edge of the asphalt ring road around the Tech Center. There are no steep slopes in the area, and the area within the buffer is gently sloping towards the east and south, more or less, with minor variations in the contours present on-site.

The existing buffer adjacent to Wetlands DE & GB-North is a mix of a native trees and shrubs though a gravel road with adjacent road-side ditches separate these two wetlands. Typical species present within the understory include salmonberry and young red alder. The canopy is primarily red alder and black cottonwood with some western red cedar present. Douglas fir are present at the higher (drier) elevations on the site. Consolidated till occurs typically at fairly shallow depths throughout this area. There are no steep slopes in the area, and the area within the buffer is gently sloping from north to south, more or less, with minor variations in the contours present on-site.

Wetland AV occurs near Wetland DE and is similar in landscape position and cover, though Wetland AV is vegetated mostly with salmonberry. The buffer for Wetland AV is the most limited of these wetlands paved and gravel roads surround this feature on three sides, leaving little native vegetation behind.

#### 8.6.4 Intended functions of the buffer

The existing buffer functions primarily for protection against water quality concerns, as well as protecting the wetland from potential contaminants from the adjacent land uses. The designed stormwater treatment system for the proposed development will address and compensate for most, if not all, water quality functions performed by the existing upland buffer. The incorporation of a full stormwater management system for the new development will greatly contribute towards the protection of all remaining wetlands from water quality impacts. Wetland AG will continue to receive the discharge from the stormwater pond, consistent with the current condition, with additional water added to the north end of Wetland AG to compensate for the adjustment of outfall location anticipated for the proposed project. The remainder of Wetland DE will continue to receive runoff from the surrounding areas.

Wetlands AG, AV, DE, and GB-North will be maintained as part of a larger forested buffer corridor that will connect these wetlands through a City-required 100-foot forested buffer along Interstate-5 and with other undeveloped areas so that a corridor will be formed that local wildlife can use.

Based on the foregoing details, we feel we can achieve the equivalent buffer functions through the construction and management of the proposed stormwater management plan and densely vegetated planted buffer.

#### **CHAPTER 9. CONCEPTUAL MITIGATION PLAN**

# 9.1 Agency Policies and Guidance

The proposed mitigation plan was designed in accordance with the policies and guidance provided in the following documents:

- The Washington State Department of Ecology (DOE) Publication #06-06-011a, Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance, and Part 2: Developing Mitigation Plans (Version 1), dated March 2006;
- The Federal Compensatory Mitigation for Losses of Aquatic Resources Final Rule (Title 33 CFR 325 and 332, April 10, 2008), and Title 40 CFR 230.93), effective June 9, 2008; and
- Critical Areas Regulations set forth in the Federal Way Revised Code (FWRC)
   Chapter 19.145 Environmentally Sensitive Areas, and Chapter 15 Shoreline
   Management (City of Federal Way, 2017).

The objective of the mitigation is to offset the direct and indirect wetland impacts resulting from complete or partial filling of wetlands as outlined in Table 2.

# 9.2 Standard Mitigation Measures

The following standard mitigation measures will be taken for all non-impacted wetland, stream, and buffers post-construction.

- **Lights** Lighting around parking areas will be directed away from the remaining wetlands on-site.
- Noise The remaining wetlands are already located within an area that is regularly used by pedestrians and dogs. Much of this foot traffic will be rerouted away from the wetland complexes remaining on-site.
- Toxic Runoff/Stormwater runoff/change in water regime A new stormwater system designed to the current King County standards will be installed for this project. All runoff from the project site will be routed through the stormwater system. Clean roof runoff will be routed as well to the remaining wetlands, as needed, through their adjacent buffers to hydrate the wetland systems in the post-development condition.
- Pets and Human Disturbance Critical area fencing will be added to the remaining wetland and buffer areas to prevent human intrusions into the buffer/wetland areas. Pets and children are not expected on or near the Site as this is a commercial development.

# 9.3 Project Site Mitigation Details

Mitigation measures for the proposed development include wetland creation, Wetland enhancement, wetland buffer restoration, and wetland and stream enhancement (**Appendix E, Sheets W1.3 – W2.2**):

•	Wetland Creation	36,023 square feet
•	Wetland Enhancement	2,020 square feet
•	Wetland Buffer Creation	98,168 square feet
•	Wetland/Stream Buffer Restoration	35,689 square feet
•	Stream Buffer Enhancement	94,266 square feet
•	Stream Buffer Replacement	14,489 square feet

# 9.4 Watershed Approach

Selecting a mitigation site using a watershed approach is a step-wise process of determining both the suitability and sustainability of a potential mitigation site within the landscape. The process aims to guide potential mitigation to those areas within the landscape where success is most likely to occur. The process is outlined in "Selecting Wetland Mitigation Sites Using a Watershed Approach" (Hruby, *et al.*, 2009). A watershed plan does not exist for this area. This mitigation site was chosen based on its availability (under same ownership) as well as its connectivity to other critical areas, consistent with the watershed approach.

# 9.5 Proposed Mitigation Plan

Mitigation for the proposed wetland impacts will be achieved through wetland creation and enhancement and buffer creation to replace the functions and values of the wetlands impacted by the development (**Appendix E, Sheets W1.3 – W2.2**).

The acreage of mitigation for direct wetland impacts was derived using the ratios provided within Table 1a of Chapter 6.5 of *Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance* (Ecology Publication #06-06-011a), which are consistent with those provided within FWRC Chapter 19.145.430(5), and reflected in **Table 3** below.

Table 3. Summary of Wetland Creation Required

	2014 DOE Rating	Wetland	l Impact	Wetland Creation		
Wetland ID	Category	Impact Type - Direct (D) Indirect (I)	Square Feet	DOE/FWRC Ratios for Creation	Square feet of Creation Required to offset impact	
AE	III	D	239	2:1	478	
AG	III	D	2,266	2:1	4,532	
AG	111	_	557	2:1	1,114	
AH	III	D	711	2:1	1,422	
AV	III	I	378	2:1	756	
BS (N)	III	D	2,683	2:1	5,366	
CG	III	D	3,458	2:1	6,916	
DE	III	D	820	2:1	1,640	
DE	111	I	3,959	2:1	7,918	
EI	IV	D	175	1.5:1	263	
EJ	III	D	231	2:1	462	
EK	III	D	179	2:1	358	
EL	III	D	372	2:1	744	
EM	III	D	306	2:1	612	
FD	IV	D	686	1.5:1	1,029	
FE	III	D	324	2:1	648	
FF	IV	D	978	1.5:1	1,467	
GB (N)	III	I	18	2:1	36	
	Totals		18,340		35,761	

#### 9.5.1 Wetland Creation

A large wetland complex will be created around Wetlands BA-2 and PK in the vicinity of North Lake. Palustrine emergent, scrub-shrub, and forested wetland will be created. Wetland creation will include the following measures:

- 1) Clearing and grubbing all invasive, non-native weedy species in the wetland creation areas;
- 2) Grading to create a series of shallow depressions within upland areas.

  Hydrology will be provided by grading down to the early growing season groundwater elevation and using stormwater runoff associated with Greenline Business Park;
- 3) Installation of habitat features such as rootwads, down logs, stumps, and snags with bird nesting and bat roosting boxes; and

4) Planting a variety of wet-adapted native tree, shrub, and emergent species to provide structural diversity and increased species diversity to the wetland system.

The proposed wetland creation will integrate the hydrology of the proposed stormwater discharge into a meandering wetland system before allowing the water to discharge south towards North Lake through Wetland BD. Great care has been taken to avoid larger existing trees and to incorporate the existing trees into the mitigation design.

The mitigation grading concept includes an area east of the required wetland creation area to demonstrate that the hydrologic connection between the required wetland creation area and Wetland BD to the south. This additional mitigation area will be part of a future mitigation project for Greenline Warehouse A for Corps-required mitigation.

#### 9.5.2 Wetland Enhancement

Wetlands BA-2 and PK will be enhanced through plantings of native woody trees and shrubs as part of the wetland creation activities.

#### 9.5.3 Wetland Buffer Creation

Wetland buffer creation is proposed around the wetland creation area. Wetland buffer enhancement will include the following measures:

- 1) Clearing and grubbing all toxic and invasive species;
- 2) Removal of man-made features, where necessary;
- 3) Placement of topsoil where necessary;
- 4) Placement of habitat features such as rootwads, down logs, stumps, and snags with bird nesting and bat roosting boxes;
- 5) Installation of 3 inches of bark mulch in all bare soil areas;
- 6) Planting a variety of native deciduous and evergreen tree and shrub species; and
- 7) Installing critical area fencing and signs at buffer boundaries where required.

#### 9.5.4 Wetland/Stream Buffer Restoration

Buffer restoration will occur around the on-site remaining stream and wetlands through the removal of an existing gravel road and by restoring buffer temporarily impacted through site grading activities. Wetland buffer restoration will include the following measures:

- 1) Remove passive recreational trail/gravel access road;
- 2) Scarify soils and amend with topsoil from on-site sources as necessary;
- 3) Installation of habitat features such as rootwads, down logs, stumps, and snags with bird nesting and bat roosting boxes;
- 4) Installation of 3 inches of bark mulch in all bare soil areas;
- 5) Planting a variety of native deciduous and evergreen tree and shrub species; and
- 6) Installing critical area fencing and signs at buffer boundaries where required.

#### 9.5.5 Stream Buffer Enhancement

The Stream AC buffer will be enhanced where native woody vegetation is currently lacking to provide improved buffer functions. Stream buffer enhancement will include the following measures:

- 1) Clearing and grubbing all toxic and invasive weedy species;
- 2) Scarify soils and amend with topsoil from on-site sources as necessary;
- 3) Installation of habitat features such as rootwads, down logs, stumps, and snags with bird nesting and bat roosting boxes;
- 4) Installation of 3 inches of bark mulch in all bare soil areas;
- 5) Planting a variety of native deciduous and evergreen tree and shrub species; and
- 6) Installing critical area fencing and signs at buffer boundaries where required.

#### 9.5.6 Performance Monitoring and Maintenance

All mitigation components will be monitored for a minimum of 5 years, consistent with agency requirements to ensure compliance with detailed performance objectives. Upon preliminary approval of this conceptual mitigation design, a final mitigation plan will be prepared that outlines the performance objectives, as well as detailed elements of the mitigation plan installation, long-term monitoring and maintenance, contingency plans, and others. Critical area fencing will be placed at the perimeter of the mitigation areas as needed to ensure pedestrian and pet traffic is restricted into the designated mitigation areas.

#### CHAPTER 10. SUMMARY

The Greenline Business Park Site is an approximately 146-acre assemblage of portions of six parcels located within the City of Federal Way in King County, Washington. The (former) Weyerhaeuser Tech Center already occurs within the Site with associated parking, paved roads, existing gravel access roads, and trails for passive recreation are present on-site.

Talasaea Consultants performed an initial delineation of on-site wetlands beginning in December 2015. Talasaea re-verified the wetland boundaries in April 2016 as the initial delineations were completed after several atypically high rainfall events. Sixty-three wetlands were identified on the Project Site. North Lake occurs adjacent to the Site. One man-made stream (Stream AC) connects the existing stormwater pond to Weyerhaeuser Pond off-site to the south.

Wetlands and other critical areas in Federal Way located outside of the Shoreline Management Zone (SMZ) are regulated under the Federal Way Revised Code (FWRC) Chapter 19.145. Wetlands identified within the Shoreline Management Zone are addressed under FWRC Chapter 15.10.

The Applicant proposes to construct approximately 1,068,000 square feet of new warehouse and office space divided amongst three new buildings. The Weyerhaeuser Tech Center will remain, but the existing parking lots will be reconfigured to a more compact arrangement around the Tech Center to maximize space. Associated

infrastructure to be constructed includes five new stormwater detention facilities, including reconfiguring the existing stormwater pond, parking for both cars and trucks, and enough maneuvering space for the truck traffic anticipated around these buildings. Due to the size of the proposed buildings, required parking and stormwater, direct and indirect impacts to some wetlands and buffer encroachments are unavoidable.

Portions of 63 wetlands, one stream, and North Lake are located on or adjacent to the site. Construction of the proposed development would directly impact (fill) 13,428 square feet (0.31-acre) of wetlands for the buildings, parking, and stormwater facilities. Four wetlands will be insufficiently buffered, resulting in an additional 4,912 square feet (0.11-acre) of wetland as being considered indirect wetland impacts due to site development encroachments.

No impacts are proposed within the ordinary high water mark of the on-site stream. While no work is proposed within the ordinary high water mark of the stream, work is proposed in proximity to the stream channel to construct new pond outfalls into the stream buffer. The existing structure will need to be relocated. The east bank stream buffer is proposed to be reduced by 25%, with replacement buffer provided adjacent to the buffer on the west side of the stream. No development activities are proposed on or adjacent to North Lake.

#### Mitigation proposed:

•	Wetland Creation	36,023 square feet
•	Wetland Enhancement	2,020 square feet
•	Wetland Buffer Creation	98,168 square feet
•	Wetland/Stream Buffer Restoration	35,689 square feet
•	Stream Buffer Enhancement	94,266 square feet
•	Stream Buffer Replacement	14,489 square feet

All critical area mitigation will be constructed prior to or concurrent with site development activities. A final mitigation plan will be prepared and submitted once preliminary concurrence has been provided for this conceptual mitigation plan. Performance monitoring will extend for a minimum of 5 years over all elements of the mitigation plan.

#### CHAPTER 11. REFERENCES

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service, Department of the Interior. FWSOBS-70/31.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual.* Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Miss.
- Hitchcock, C.L., and A. Cronquist. 1973. *Flora of the Pacific Northwest*. University of Washington Press. 730 pp.
- Hruby, T. 2014. Washington State Wetland Rating System for Western Washington. 2014 Update. Washington State Department of Ecology Publication # 14-06-029.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List*: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
- Munsell Color. 1988. *Munsell Soil Color Charts*. Kollmorgen Instruments Corp., Baltimore, Maryland.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <a href="http://websoilsurvey.nrcs.usda.gov/">http://websoilsurvey.nrcs.usda.gov/</a>. Accessed [September 2017].
- U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region. Wetland Regulatory Assistance Program. ERDC/EL TR-10-3
- U.S. Fish and Wildlife Service. 1989. *National Wetlands Inventory Map, Poverty Bay Quadrangle.*
- Washington State Department of Ecology. March 1997. Washington State Wetland Identification and Delineation Manual.
- Washington State Department of Ecology. *Water Quality Assessment and 303(d) List.* 2016. www.ecy.wa.gov/programs/wq/303d (accessed September 2017).
- Washington State Department of Fish and Wildlife [Map Online], Olympia (WA): SalmonScape [September 2017]. URL: <a href="http://wdfw.wa.gov/mapping/salmonscape/index.html">http://wdfw.wa.gov/mapping/salmonscape/index.html</a>
- Washington State Department of Fish and Wildlife. 2016. *Priority Habitats and Species Database* [online], Olympia, WA. [accessed September 2017]. <a href="https://www.wdfw.wa.gov/mapping/phs/">www.wdfw.wa.gov/mapping/phs/</a>

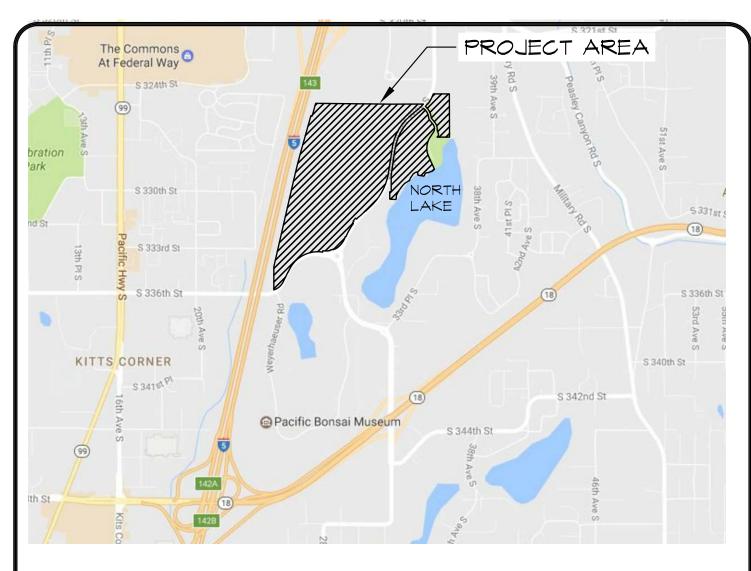
## **FIGURES**

Figure 1 – Vicinity Map & Driving Directions

Figure 2 – National Wetlands Inventory Map

Figure 3 – NRCS Soil Map

Figure 4 – Hydrologic Connections Overview



#### DRIVING DIRECTIONS:

- I. FROM DOWNTOWN SEATTLE TAKE I-5 SOUTH FOR IO.5 MILES.
- 2. USE THE 2ND LANE FROM THE RIGHT TO TAKE EXIT 143 FOR S 320TH ST TOWARD FEDERAL WAY
- 3. TAKE A SHARP LEFT ONTO S 320TH ST.
- 4. IN 0.5 MILES TURN RIGHT ONTO WEYERHAEUSER WAY S
- 5. YOUR DESTINATION WILL BE ON THE RIGHT.





Resource & Environmental Planning 15020 Bear Creek Road Northeast Woodinville, Washington 98077 Bus (425)861-7550 - Fax (425)861-7549 FIGURE #1

VICINITY MAP & DRIVING DIRECTIONS GREENLINE BUSINESS PARK FEDERAL WAY, WASHINGTON

	0/11.1	(1)
DESIGN	DRAWN	PROJECT
	KM	15720
SCALE		
NTS		
DATE	7	
9-20-2	017 \	
REVISED		



# LEGEND

TYPE DESCRIPTION

PEMI/SSF PALUSTRINE EMERGENT PERSISTENT/SCRUB-SHRUB SEMIPERMANENTLY

FLOODED

PALUSTRINE SCRUB-SHRUB/EMERGENT PERSISTENT SEASONALLY PSS/EMIC

FLOODED

SOURCE: U.S. FISH AND WILDLIFE SERVICE, (NOV 2016). NATIONAL WETLANDS

INVENTORY WEBSITE, U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE

SERVICE, WASHINGTON D.C.

http://www.fws.gov/wetlands/data/wetland-codes.html



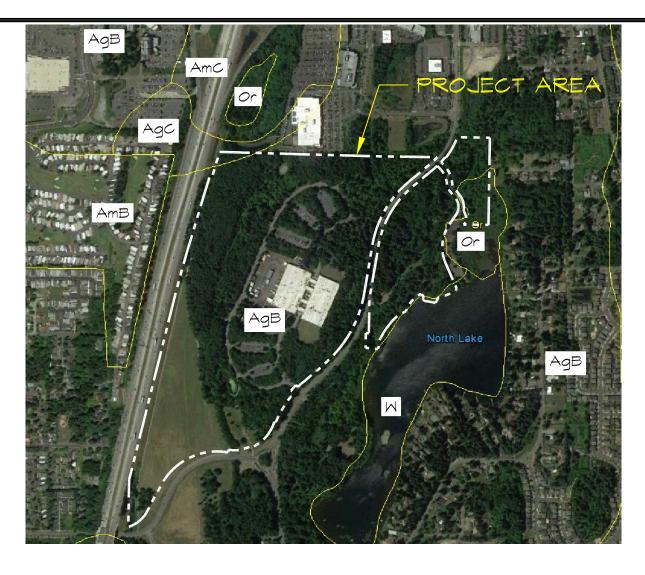
SCALE: NTS

TALASAEA CONSULTANTS, INC. Resource & Environmental Planning

15020 Bear Creek Road Northeast Woodinville, Washington 98077 Bus (425)861-7550 - Fax (425)861-7549 FIGURE #2

NATIONAL WETLANDS INVENTORY MAP GREENLINE BUSINESS PARK FEDERAL WAY, WASHINGTON

DRAWN PROJECT DESIGN KM 15720 SCALE NTS DATE 9-20-2017 REVISED



# LEGEND

TYPE DESCRIPTION, SLOPES

AgB ALDERWOOD GRAVELLY SANDY LOAM, O TO 8 PERCENT SLOPES AGC ALDERWOOD GRAVELLY SANDY LOAM, 8 TO 15 PERCENT SLOPES

W WATER

Or ORCAS PEAT

SOURCE: SOIL SURVEY STAFF, NATURAL RESOURCES CONSERVATION SERVICE,

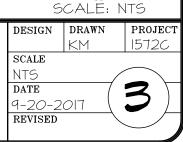
UNITED STATES DEPARTMENT OF AGRICULTURE, WEB SOIL SURVEY. AVAILABLE ONLINE AT http://websoilsurvey.nrcs.usda.qov/. ACCESSED

(9/19/2017).

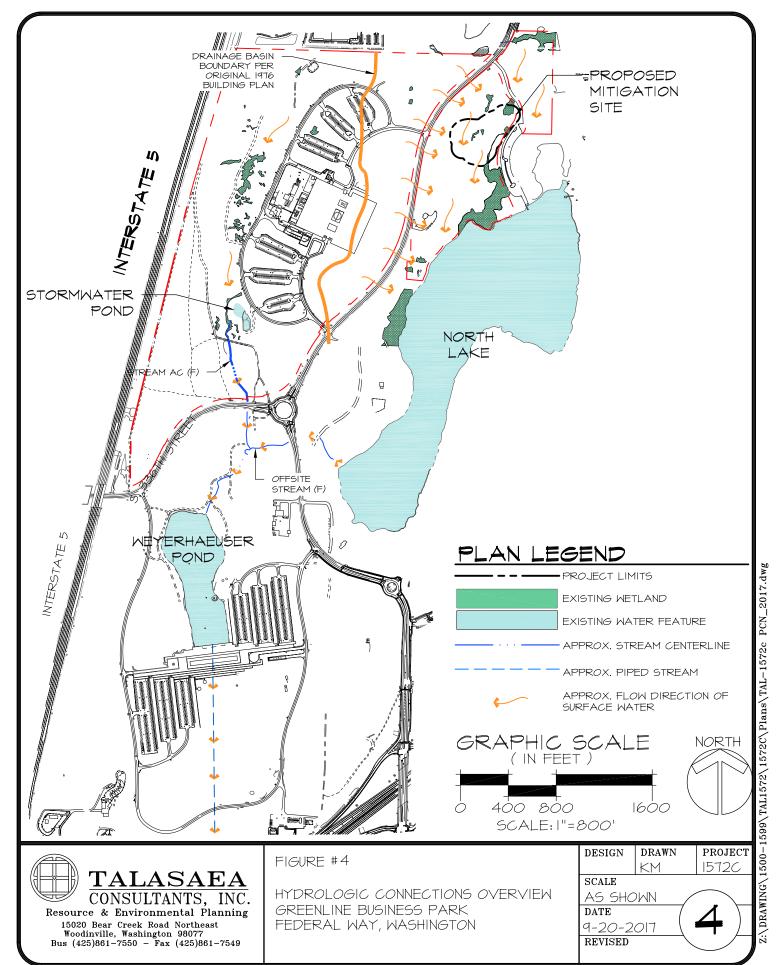


Resource & Environmental Planning 15020 Bear Creek Road Northeast Woodinville, Washington 98077 Bus (425)861-7550 - Fax (425)861-7549 FIGURE #3

NRCS SOIL MAP GREENLINE BUSINESS PARK FEDERAL WAY, WASHINGTON



NORTH



## **APPENDIX A**

# WETLAND DETERMINATION DATA FORMS, TALASAEA CONSULTANTS, 2016

Project/Site: Weyerhaeuser		City/C	ounty: Fede	leral Wa	y/King	Sampling Date: 4/9/1	6
Applicant/Owner: Federall Way Campus, LLC					State: WA	Sampling Point: AV-I	UPL1
Investigator(s): Richard Tveten			Section	on, Tow	nship, Range: Section 16	6, T21N, R4E	
Landform (hillslope, terrace, etc.): Terrace		Loca	I relief (con	ncave, c	onvex, none): None	Slope (c	%): <u>1</u>
Subregion (LRR): LRR A	Lat: 47.30	- 06750	)		Long: -122.298169	Datum: N	AD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8					_		
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology sign	•			,	nal Circumstances" prese	ent? Yes⊠ No.□	1
Are Vegetation, Soil, or Hydrology natu					l, explain any answers in		•
							**** ****
SUMMARY OF FINDINGS – Attach site map s	snowing	Sam	piing po	int ioc	cations, transects,	important leatui	es, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒			Is the Sam	npled A	rea		
Hydric Soil Present? Yes ☐ No ☐ Wetland Hydrology Present? Yes ☐ No ☐			within a W	Vetland	? Yes ☐ No	, 🖂	
Wetland Hydrology Present? Yes ☐ No ☒  Remarks: Located uphill from wetland							
Tromand. 200atod aprilii irom wonana							
<b>VEGETATION – Use scientific names of plant</b>	s.						
	Absolute		inant Indica		Dominance Test worksl	neet:	
Tree Stratum (Plot size: 30ft)			cies? Stat		Number of Dominant Spe		(4)
1. Acer macrophyllum					That Are OBL, FACW, or	FAC: 2	_ (A)
2. Populus tremuloides					Total Number of Dominar		<b>(D)</b>
					Species Across All Strata	a: <u>5</u>	_ (B)
4.	75				Percent of Dominant Spe That Are OBL, FACW, or		(A/R)
Sapling/Shrub Stratum (Plot size: 15ft)							_ (A/B)
1. Rubus spectabilis			FAC		Prevalence Index works		
2. Rubus armeniacus			FAC		Total % Cover of:		
3. Oemleria cerasiformis	10	N	<u>FACL</u>		OBL species		
4.					FACW species		
5					FAC species		
Harb Chrotism (Diet sines 5ft)	80	= To	otal Cover		FACU species		
Herb Stratum (Plot size: 5ft)		.,	=.0		UPL species		
1. Dicentra formosa	20	Υ	<u>FACL</u>	<u>U</u>	Column Totals:	(A)	(B)
2					Prevalence Index =	= B/A =	
					Hydrophytic Vegetation		-
5.					☐ Dominance Test is >5		
					☐ Prevalence Index is ≤		
6. 7.	·			<del></del>	☐ Morphological Adapta		orting
8.				_		or on a separate she	
<u> </u>	20	= To	otal Cover		□ Problematic Hydroph	ytic Vegetation1 (Exp	lain)
Woody Vine Stratum (Plot size: 15ft)			J. G. C.				
1. None					<sup>1</sup> Indicators of hydric soil a be present, unless disturb		y must
2.					be present, unless distuit	Ded of problematic.	
	0	= To	otal Cover		Hydrophytic		
% Bare Ground in Herb Stratum 80 % Cove	er of Biotic (	Crust			Vegetation Present? Yes	□ No ⊠	
Remarks:				I			_

Profile Desc Depth	Matrix	,		Radi	ox Features	2					
(inches)	Color (moist)	%	Color (n		%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-1			_						Duff		
1-10	10YR 2/2	100						Loam			
10-16	10YR 3/2	100						Loam			
10-10	10111 3/2	100	_					Loam			•
<del></del>	-										
					_						
					_						
	oncentration, D=D			•			d Sand G			Pore Lining, M	
-	Indicators: (App	licable to				ed.)				olematic Hydri	c Soils <sup>3</sup> :
☐ Histosol	(A1) pipedon (A2)			dy Redox ( oped Matrix					cm Muck (A10	,	
☐ Black Hi				my Mucky I	` '	(excent	MIRA 1\\		d Parent Mate	enai (1F2) ark Surface (TF	(12)
	n Sulfide (A4)			ny Gleyed I		(схосрі	WERT 1))	· <del></del>	her (Explain ir	,	12)
	d Below Dark Surfa	ace (A11)		eted Matrix	. ,				(=		
☐ Thick Da	ark Surface (A12)		☐ Red	ox Dark Su	rface (F6)						
	lucky Mineral (S1)			leted Dark	•	7)			•	phytic vegetation	
☐ Sandy G	Sleyed Matrix (S4)		☐ Red	ox Depress	sions (F8)				-	gy must be pres	
Postrictivo	Layer (if present)							uni	less disturbed	or problematic	•
	Layer (ii present)										
	ches):							Hydric S	oil Present?	Yes □ No	$\bowtie$
	o redox features p							Tiyunc 3	on resent:	163 🗆 110	
Nemaiks. N	o redux realures p	ieseiii									
HYDROLO											
,	drology Indicator										
-	cators (minimum o	of one requ			• •	(5.0) (				ators (2 or more	
☐ Surface	e Water (A1)			☐ Water-St <b>A, and 4B</b> )		es (B9) ( <b>є</b>	except ML			ined Leaves (B	9) ( <b>MLRA 1, 2,</b>
_ •	/ater Table (A2)		_	Salt Crus	` ,				_	Patterns (B10)	
☐ Saturat	tion (A3)			Aquatic	nvertebrate	es (B13)			☐ Dry-Seaso	on Water Table	(C2)
☐ Water I	` ,			] Hydroge		, ,					al Imagery (C9)
	ent Deposits (B2)				Rhizosphe	-	-	oots (C3)	·	nic Position (D2	)
	eposits (B3)		L	Presenc	e of Reduc	ed Iron (C	(4)		l I Shallow A	quitard (D3)	
I I Algal M			_				,				
_	Mat or Crust (B4)				ron Reduct		ed Soils (C		☐ FAC-Neut	ral Test (D5)	DD 4\
☐ Iron De	eposits (B5)		[	Stunted	or Stressed	d Plants (I	ed Soils (C	N)	☐ FAC-Neut ☐ Raised Ar	nt Mounds (D6(I	
☐ Iron De	eposits (B5) e Soil Cracks (B6)		C C	Stunted		d Plants (I	ed Soils (C	N)	☐ FAC-Neut ☐ Raised Ar		
☐ Iron De☐ Surface☐ Inundat	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri	al Imager	[ [ (B7)	Stunted	or Stressed	d Plants (I	ed Soils (C	N)	☐ FAC-Neut ☐ Raised Ar	nt Mounds (D6(I	
☐ Iron De☐ Surface☐ Inundat☐ Sparsel	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Cond	al Imager	[ [ (B7)	Stunted	or Stressed	d Plants (I	ed Soils (C	N)	☐ FAC-Neut ☐ Raised Ar	nt Mounds (D6(I	
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conditions:	al Imager ave Surfa	[ [ [ y (B7) ce (B8)	Stunted Other (E	or Stressed xplain in R	d Plants (I emarks)	ed Soils (C	N)	☐ FAC-Neut ☐ Raised Ar	nt Mounds (D6(I	
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present?	al Imager ave Surfa Yes □	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Stunted Other (E	or Stressed xplain in R	d Plants (I emarks)	ed Soils (C	N)	☐ FAC-Neut ☐ Raised Ar	nt Mounds (D6(I	
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conditions: eer Present? Present?	al Imager ave Surfa Yes  Yes  Yes	C   C   D   y (B7)   ce (B8)   No ⊠ D   No ⊠ D	Stunted Other (E	or Stressed xplain in R s): s):	d Plants (I emarks)	ed Soils (CD1)(LRR A	)   	☐ FAC-Neut☐ Raised Ar☐Frost-Heav	nt Mounds (D6(I	D7)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P (includes ca	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present? resent?	al Imager ave Surfa Yes ☐ Yes ☐ Yes ⊠	C	Stunted Other (E  epth (inche epth (inche epth (inche	or Stressed xplain in Respectively.	d Plants (I	ed Soils (CD1)(LRR A	and Hydrold	☐ FAC-Neut ☐ Raised Ar	nt Mounds (D6(I	
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P (includes ca	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conditions: eer Present? Present?	al Imager ave Surfa Yes ☐ Yes ☐ Yes ⊠	C	Stunted Other (E  epth (inche epth (inche epth (inche	or Stressed xplain in Respectively.	d Plants (I	ed Soils (CD1)(LRR A	and Hydrold	☐ FAC-Neut☐ Raised Ar☐Frost-Heav	nt Mounds (D6(I	D7)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P (includes ca	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present? resent?	al Imager ave Surfa Yes ☐ Yes ☐ Yes ⊠	C	Stunted Other (E  epth (inche epth (inche epth (inche	or Stressed xplain in Respectively.	d Plants (I	ed Soils (CD1)(LRR A	and Hydrold	☐ FAC-Neut☐ Raised Ar☐Frost-Heav	nt Mounds (D6(I	D7)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P (includes cal Describe Re	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present? resent?	al Imager ave Surfa Yes ☐ Yes ☐ Yes ⊠	y (B7) ce (B8)  No 🖾 D No 🖾 D No 🗆 D , monitoring	Stunted Other (E  epth (inche epth (inche epth (inche well, aerial	s):s): 16photos, pro	d Plants (I emarks)	ed Soils (CD1)(LRR A	and Hydrold	☐ FAC-Neut☐ Raised Ar☐Frost-Heav	nt Mounds (D6(I	D7)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P (includes cal Describe Re	eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present? resent? pillary fringe) corded Data (stres	al Imager ave Surfa Yes ☐ Yes ☐ Yes ⊠	y (B7) ce (B8)  No 🖾 D No 🖾 D No 🗆 D , monitoring	Stunted Other (E  epth (inche epth (inche epth (inche well, aerial	s):s): 16photos, pro	d Plants (I emarks)	ed Soils (CD1)(LRR A	and Hydrold	☐ FAC-Neut☐ Raised Ar☐Frost-Heav	nt Mounds (D6(I	D7)

Project/Site: Weyerhaeuser	t/Site: Weyerhaeuser City/County: Federal W									
Applicant/Owner: Federall Way Campus, LLC				State: WA	Sampling Point: AV-WET1					
Investigator(s): Richard Tveten			Section,	Township, Range: Section	16, T21N, R4E					
Landform (hillslope, terrace, etc.): Glacial Till Plain Local relief (concave, convex, none): concave depression Slope										
Subregion (LRR): LRR A	_ Lat: 47.30	06750		Long: <u>-122.298169</u>	Datum: NAD83					
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slop	oes		NWI classifica	ation: None					
Are climatic / hydrologic conditions on the site typical for this										
Are Vegetation No, Soil No, or Hydrology No significantly di	•			rcumstances" present? Ye						
Are Vegetation No, Soil No, or Hydrology No naturally proble				ain any answers in Remarks	<del>_</del>					
				•						
SUMMARY OF FINDINGS – Attach site map s	showing	samp	ling poin	locations, transects	, important features, etc.					
Hydrophytic Vegetation Present? Yes ⊠ No □		l:	s the Sampl	ed Area						
Hydric Soil Present? Yes ⊠ No ☐			within a Wet		10 □					
Wetland Hydrology Present? Yes ⊠ No ☐	0 -:-  -:		alavvad duain							
Remarks: Wetland is a disturbed area flanked by roads on	3 Sides whi	cn nas	siowed drain	lage of the area.						
VEGETATION – Use scientific names of plant	·e									
VEGETATION OSC SCIONATIO NATIOCS OF Plant		Domin	nant Indicato	Dominance Test work	sheet					
Tree Stratum (Plot size: 30ft)			es? Status							
1. Alnus rubra	70	Yes	FAC	_ That Are OBL, FACW, o	or FAC: 2 (A)					
2. Populus tremuloides	20	Yes	FACU	Total Number of Domin	ant					
3.				Species Across All Stra	ta: <u>2</u> (B)					
4.				Percent of Dominant Sp						
Sapling/Shrub Stratum (Plot size: 15ft)	90	= I ota	al Cover	That Are OBL, FACW, of	or FAC: <u>100</u> (A/B)					
1. Rubus spectabilis	50	Yes	FAC	Prevalence Index wor	ksheet:					
					Multiply by:					
3.				OBL species	x 1 =					
4.				FACW species	x 2 =					
5				FAC species 100	x 3 = <u>300</u>					
	50	= Tota	al Cover	FACU species	x 4 =					
Herb Stratum (Plot size: 5ft)				UPL species	x 5 =					
1. None				- Column Totals: 100	(A) <u>300</u> (B)					
2.				- Prevalence Index	- R/Δ - 3					
3.				Hydrophytic Vegetation						
4.		-		Dominance Test is						
5		-	<del></del>	☐ Prevalence Index is						
		-		-   -	otations <sup>1</sup> (Provide supporting					
7		-			s or on a separate sheet)					
0	0	= Tota	al Cover	Problematic Hydrop	phytic Vegetation <sup>1</sup> (Explain)					
Woody Vine Stratum (Plot size: 15ft)	<u> </u>	- 100	ai oovoi							
1. None					l and wetland hydrology must					
2.				be present, unless distu	irbed or problematic.					
	0	= Tota	al Cover	Hydrophytic						
% Bare Ground in Herb Stratum 100 % Cove	er of Biotic C	Crust 0		Vegetation Present? Yes	s⊠ No□					
Remarks:		<u></u>								

Profile Des	cription: (Descri	oe to the	depth ne	eded to docu	ment the i	ndicator	or confire	n the absen	ce of indicators.)
Depth	Matrix				ox Feature	S			
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-13</u>	10YR 2/1	100			_			silty loam	OM present
13-16	10YR 5/1	80	<u>10Y</u>	R 5/8	20	С	M	Silt	Prominent
							-	-	
						<del></del>	-		_
<u></u>			_						
1Typo: C-C	oncentration, D=D	lonlotion		lucod Matrix C	S-Covered	d or Coat	nd Sand G	raine 21	Location: PL=Pore Lining, M=Matrix.
	Indicators: (App						su Sanu G		ators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol				Sandy Redox (		,			cm Muck (A10)
	oipedon (A2)			Stripped Matrix					ed Parent Material (TF2)
☐ Black Hi				Loamy Mucky N	, ,	(except	MLRA 1))	□ Ve	ery Shallow Dark Surface (TF12)
☐ Hydroge	en Sulfide (A4)			oamy Gleyed N	Matrix (F2)			☐ Ot	her (Explain in Remarks
	d Below Dark Surf	ace (A11)		Depleted Matrix	. ,				
	ark Surface (A12)			Redox Dark Su	, ,	_,		2	
	Mucky Mineral (S1)		_	Depleted Dark	,	7)			ators of hydrophytic vegetation and
☐ Sandy G	Gleyed Matrix (S4)			Redox Depress	ions (F8)				Itland hydrology must be present, less disturbed or problematic.
Restrictive	Layer (if present)	١-						1	less distarbed of problematic.
Type:		, <u>-</u>							
	ches):							Hydric S	oil Present? Yes ⊠ No □
	· ·			ficient qualities	to be mucl	. Carbon	content d		gh enough-no organic carbon testing done.
<b>HYDROLO</b>	GY								
Wetland Hy	drology Indicato	rs:							
Primary Indi	cators (minimum o	of one requ	uired; ch	eck all that app	ly)			Sec	condary Indicators (2 or more required)
☐ Surfac	e Water (A1)			☐ Water-Sta		res (B9) (	except ML		Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
☐ High W	/ater Table (A2)			☐ Salt Crus	st (B11)				□ Drainage Patterns (B10)
	tion (A3)			Aquatic I	nvertebrat	es (B13)			☐ Dry-Season Water Table (C2)
☐ Water	Marks (B1)			☐ Hydroge	n Sulfide C	Odor (C1)			<ul><li>Saturation Visible on Aerial Imagery (C9)</li></ul>
☐ Sedim	ent Deposits (B2)			☐ Oxidized	Rhizosph	eres alon	g Living Ro	oots (C3)	Geomorphic Position (D2)
☐ Drift D	eposits (B3)			☐ Presence	e of Reduc	ed Iron (0	C4)		☐ Shallow Aquitard (D3)
_	Mat or Crust (B4)				ron Reduct				FAC-Neutral Test (D5)
	eposits (B5)				or Stresse		D1)( <b>LRR</b> A		Raised Ant Mounds (D6(LRR A)
☐ Surfac	e Soil Cracks (B6)			Other (E	xplain in R	emarks)			☐Frost-Heave Hummocks (D7)
	tion Visible on Aer								
☐ Sparse	ly Vegetated Cond	ave Surfa	ce (B8)						
Field Obser	vations:								
Surface Wat	ter Present?	Yes 🗌	No 🖂	Depth (inches	s):				
Water Table	Present?	Yes 🛚	No 🗌	Depth (inches	s): <u>4</u>				
	pillary fringe)	Yes ⊠	No 🗌	Depth (inches				-	ogy Present? Yes ⊠ No □
Describe Re	ecorded Data (stre	am gauge	, monitoi	ing well, aerial	photos, pr	evious ins	spections),	, if available:	
Remarks:									

Project/Site: TAL-1572		City/Co	ounty: <u>Federal \</u>	Vay/King County	Sampling Date: 12/19/2015
Applicant/Owner: IRG/Weyerhauser				State: WA	Sampling Point: BA-UPL1
Investigator(s): JMM, DRT			Section, Te	ownship, Range: <u>S15 T21</u>	N R4E
Landform (hillslope, terrace, etc.): Hillslope		Local	I relief (concave	, convex, none): Convex	Slope (%): <u>8-10%</u>
Subregion (LRR): <u>LRR-A</u>	Lat: 47.30	09777		Long: -122.289189	Datum: NAD83
Soil Map Unit Name: Alderwood gravel sandy loam, 0-8% sl					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-			ormal Circumstances" pres	
Are Vegetation, Soil, or Hydrology natu				led, explain any answers ir	
SUMMARY OF FINDINGS – Attach site map					,
	Silowing	<u> </u>	pinig ponit i	oodiioiis, transcots,	, important reatures, etc.
Hydrophytic Vegetation Present?  Yes No			Is the Sample	d Area	
Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒			within a Wetla	nd? Yes □ N	lo 🛚
Remarks:					
VEGETATION - Use scientific names of plant	ts.				
T. 0 (D	Absolute		nant Indicator	Dominance Test works	sheet:
Tree Stratum (Plot size: <u>30</u> )			cies? Status	Number of Dominant Sp	
1. Alnus rubra				That Are OBL, FACW, o	or FAC: 1 (A)
2. Pseudotsuga menziesii			<u>FACU</u>	Total Number of Domina	
3. Thuja plicata4.				Species Across All Strat	ta: <u>3</u> (B)
4.	40			Percent of Dominant Sp	
Sapling/Shrub Stratum (Plot size: 15)	40	- 10	itai Oovoi	I nat Are OBL, FACW, o	or FAC: <u>33</u> (A/B)
Gaultheria shallon	<u>75</u>	Y	<u>FACU</u>	Prevalence Index work	ksheet:
2. Alnus rubra	5	N	FAC	Total % Cover of:	Multiply by:
3.				OBL species 0	x 1 = <u>0</u>
4.				*	x 2 = <u>0</u>
5				*	x 3 = <u>90</u>
Hade Otratura (Distratas 5)	80	= To	tal Cover		x 4 = <u>360</u>
Herb Stratum (Plot size: 5)					x 5 = <u>0</u>
1.				Column Totals: 120	(A) <u>450</u> (B)
2				Prevalence Index	= B/A = 3.75
4.	-			Hydrophytic Vegetatio	·
5.				☐ Dominance Test is >	
6.				☐ Prevalence Index is	. ≤3.0¹
7.				☐ Morphological Adap	otations <sup>1</sup> (Provide supporting
8.					s or on a separate sheet)
	0	= To	tal Cover	☐ Problematic Hydrop	hytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: <u>30</u> )					
1				<sup>1</sup> Indicators of hydric soil be present, unless distu	l and wetland hydrology must urbed or problematic.
2					The or problemation
	0	= To	tal Cover	Hydrophytic Vegetation	
% Bare Ground in Herb Stratum % Cove	er of Biotic (	Crust _			s □ No ⊠
Remarks:				•	

Depth	Matrix	(				x Feature	S			nce of indicators.)
(inches)	Color (moist)	%	Color	(moist)	_	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-8	10YR 2/1	100					. ———		Sandy loar	m Digging around rocks
			_							
-	-					-				
	-	<del></del>								
		<del></del>	_							<del>-</del>
								-		
¹Type: C=C	oncentration, D=D	epletion, R	M=Redu	ced Matri	x, CS	S=Covere	d or Coat	ed Sand G	rains. 2	Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRRs	, unless	other	wise not	ed.)		Indic	ators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	. ,		□ s	andy Red	ox (S	55)				cm Muck (A10)
	pipedon (A2)			tripped M		. ,				ed Parent Material (TF2)
☐ Black Hi								MLRA 1))		Yery Shallow Dark Surface (TF12)
	n Sulfide (A4) d Below Dark Surf	200 (411)		amy Gley						ther (Explain in Remarks
	ark Surface (A12)	ace (ATT)		edox Darl						
	lucky Mineral (S1)	)		epleted D		` ,	7)		<sup>3</sup> Indic	cators of hydrophytic vegetation and
	Bleyed Matrix (S4)			edox Dep		•	,			etland hydrology must be present,
									ur	nless disturbed or problematic.
Restrictive	Layer (if present)	):								
Type:										
Depth (in	ches):								Hydric S	Soil Present? Yes 🗌 No 🛛
Remarks:										
HYDROLO	GY									
Wetland Hv	drology Indicato	rs:								
Primary Indi	cators (minimum o	of one reaui	ired: che	ck all that	apply	v)			Se	econdary Indicators (2 or more required)
	e Water (A1)		, , , , , , ,				/es (B9) (	except ML		Water Stained Leaves (B9) (MLRA 1, 2,
				4A, and			( -) (			4A, and 4B))
☐ High W	/ater Table (A2)			□ Salt	Crus	t (B11)				☐ Drainage Patterns (B10)
☐ Satura	tion (A3)			☐ Aqua	atic Ir	nvertebrat	es (B13)			☐ Dry-Season Water Table (C2)
☐ Water	Marks (B1)			☐ Hydi	ogen	Sulfide (	Odor (C1)			☐ Saturation Visible on Aerial Imagery (C9
☐ Sedime	ent Deposits (B2)							g Living Ro	oots (C3)	Geomorphic Position (D2)
	eposits (B3)					of Reduc	`	,		Shallow Aquitard (D3)
	Mat or Crust (B4)							led Soils (C		FAC-Neutral Test (D5)
	eposits (B5)							D1)( <b>LRR</b> A	<b>A</b> )	Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)			☐ Othe	er (Ex	plain in R	emarks)			Frost-Heave Hummocks (D7)
	ion Visible on Aer	• •	, ,							
= = = = = = = = = = = = = = = = = = = =	y Vegetated Cond	ave Surfac	e (B8)							
Field Obser	vations:									
Surface Wat	er Present?	Yes 🗌	No 🛚			s):				
Water Table	Present?	Yes 🗌	No 🛚	Depth (ir	ches	s):				
Saturation P		Yes 🗌	No 🛚	Depth (ir	ches	s):		Wet	land Hydrol	logy Present? Yes □ No ⊠
	pillary fringe) corded Data (stre	am gauge.	monitorir	ng well, a	erial r	ohotos, pr	evious in	spections).	if available:	
	22222400	3		J J, C.		, p.		-,		
Remarks: No	o indicators of wet	land hydrol	ogv desr	oite unusi	ıallv	vet condit	ions.			
		, 0.	57 ·P		, .		-			

Project/Site: TAL-1572		City/C	County:	Federal W	ay/King County	Samplinç	g Date: <u>12/19/2</u>	2015
Applicant/Owner: IRG/Weyerhauser					State: WA	Samplinç	g Point: <u>BA-W</u>	ET1
Investigator(s): <u>JMM, DRT</u>			s	Section, To	wnship, Range: <u>S15 T2</u>	1N R4E		
Landform (hillslope, terrace, etc.): Depressional		Loca	al relief	(concave,	convex, none): None		Slope (%)	):
Subregion (LRR): <u>LRR-A</u>	Lat: 47.30	09768	3		Long: <u>-122.289239</u>		Datum: NAI	D83
Soil Map Unit Name: Alderwood gravel sandy loam, 0-8% sl	opes				NWI classifi	cation: PFO/	/PSS	
Are climatic / hydrologic conditions on the site typical for this	time of year	ır? Ye	es 🛚	No ☐ (If	no, explain in Remarks	s.)		
Are Vegetation, Soil, or Hydrology sign	ificantly dist	turbec	d?	Are "No	mal Circumstances" pr	esent? Yes	s ⊠ No □	
Are Vegetation, Soil, or Hydrology natu	-			(If neede	d, explain any answers	in Remarks	)	
SUMMARY OF FINDINGS - Attach site map s	showing	sam	pling	point lo	cations, transect	s, importa	ant feature	s, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □	_							•
Hydric Soil Present? Yes ⊠ No □				Sampled				
Wetland Hydrology Present? Yes ⊠ No □			withir	n a Wetlan	d? Yes ⊠	No ∐		
Remarks:								
VEGETATION – Use scientific names of plant	S.							
Tree Stratum (Plot size: 30)	Absolute % Cover				Dominance Test wor			
1. Alnus rubra					Number of Dominant 3 That Are OBL, FACW		3	(A)
2.					Total Number of Dom			,
3.					Species Across All St		3	(B)
4					Percent of Dominant S	Species		
Sapling/Shrub Stratum (Plot size: 15)	<u>15</u>	= Tc	otal Co	ver	That Are OBL, FACW		100	(A/B)
1. Alnus rubra	45	Υ		FAC	Prevalence Index wo	rksheet:		
2. Spiraea douglasii					Total % Cover of:		Multiply by:	
3. Rubus spectabilis					OBL species 0			
4.					FACW species 0	x 2	= 0	_
5				_	FAC species 0			
Horb Stratum (Diet cize: 5)	90	= To	otal Co	ver	FACU species 0			
Herb Stratum (Plot size: <u>5</u> ) 1.					UPL species 0			
2.					Column Totals: 0	(A)	0	(B)
3.					Prevalence Inde	= B/A = C	)	
4.					Hydrophytic Vegetat	ion Indicato	ors:	
5					□ Dominance Test is			
6.					☐ Prevalence Index			
7					☐ Morphological Ada data in Remar			
8.				_	☐ Problematic Hydro			
Woody Vine Stratum (Plot size: 30)	0	= 10	otal Co	ver	•			
1.					<sup>1</sup> Indicators of hydric so			must
2					be present, unless dis	turbed or pro	oblematic.	
	0	= To	otal Co	ver	Hydrophytic			
% Bare Ground in Herb Stratum % Cove	er of Biotic C	Crust _			Vegetation Present? Y	es⊠ No∣		
Remarks:								

			eptii need		dox Feature		or commi	ii tile abse	nce of indicators.)
Depth (inches)	Matrix Color (moist)	<u>%</u>	Color (	moist)	<u>wox reature</u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
					'				
	-		_						<del>-</del>
								-	<u> </u>
								-	
	-								
					1				
-	-								
					<del></del>				
¹Type: C=C	oncentration, D=D	Depletion, R	RM=Reduc	ed Matrix,	CS=Covere	ed or Coat	ed Sand G	rains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRRs,	unless otl	herwise no	ted.)		Indi	cators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	(A1)		☐ Sa	ndy Redox	(S5)				2 cm Muck (A10)
	oipedon (A2)			ripped Matr	, ,				Red Parent Material (TF2)
☐ Black Hi					/ Mineral (F		MLRA 1))		Very Shallow Dark Surface (TF12)
	n Sulfide (A4)				d Matrix (F2	)			Other (Explain in Remarks
	Below Dark Surf	ace (A11)		oleted Mati					
	ark Surface (A12) lucky Mineral (S1)	١			Surface (F6)			3Indi	instars of hydrophytic vogetation and
	ilicky iviirierai (31) Bleyed Matrix (S4)				k Surface (F ssions (F8)	-7)			icators of hydrophytic vegetation and vetland hydrology must be present,
Garlay C	neyed Matrix (O+)			dox Dopio	0010110 (1 0)				inless disturbed or problematic.
Restrictive	Layer (if present	<b>)</b> :							
_									
Depth (in								Hydric	Soil Present? Yes ⊠ No □
	,	. (		de als les et al'e		the second	1 1		nud before they can be described. Indicators
HYDROLO	GY								
Wetland Hy	drology Indicato	rs:							
_	cators (minimum o		ired; chec	k all that ar	(ylgo			S	econdary Indicators (2 or more required)
	e Water (A1)	•			Stained Lea	ves (B9) (	except ML	.RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
☐ High W	/ater Table (A2)			Salt Cr	ust (B11)				☐ Drainage Patterns (B10)
☐ Satura					c Invertebra	tes (B13)			☐ Dry-Season Water Table (C2)
	Marks (B1)				gen Sulfide				☐ Saturation Visible on Aerial Imagery (C9)
☐ Sedim	ent Deposits (B2)			Oxidize	ed Rhizosph	neres alor	ng Living Ro	oots (C3)	☐ Geomorphic Position (D2)
☐ Drift D	eposits (B3)			☐ Preser	nce of Redu	ced Iron (	C4)		☐ Shallow Aquitard (D3)
☐ Algal N	fat or Crust (B4)			Recen	t Iron Reduc	ction in Til	led Soils (C	26)	☐ FAC-Neutral Test (D5)
☐ Iron De	eposits (B5)			☐ Stunte	d or Stresse	ed Plants	(D1)( <b>LRR A</b>	<b>A</b> )	☐ Raised Ant Mounds (D6(LRR A)
☐ Surfac	e Soil Cracks (B6)	)		Other (	Explain in F	Remarks)			☐Frost-Heave Hummocks (D7)
☐ Inundat	ion Visible on Aer	ial Imagery	(B7)						
☐ Sparse	y Vegetated Cond	cave Surfac	e (B8)						
Field Obser	vations:								
Surface Wat	er Present?	Yes 🛛	No 🔲 🔝	Depth (inch	nes): <u>8</u>				
Water Table	Present?				nes):				
Saturation F					nes):		Wet	land Hydro	ology Present? Yes ⊠ No □
(includes ca	pillary fringe)								
Describe Re	corded Data (stre	am gauge,	monitoring	g well, aeri	al photos, p	revious in	spections),	if available	<b>3</b> :
Remarks: U	nusually wet weat	her.							

Applicant/Owner:     RGWeyethauser	Project/Site: TAL-1572		City/C	County: <u>F</u>	Federal W	ay/King County	Sampling Date	:12/19/2015	
Local relief (concave, convex, none): None	Applicant/Owner: IRG/Weyerhauser			-		State: WA	Sampling Point	t: BB-UPL1	
Local relief (concave, convex, none): None	Investigator(s): JMM, DRT			Se	ection, Tov	wnship, Range: <u>S15 T21N</u>	I R4E		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)  Are Vegetation Soil or Hydrology significantly disturbed?									
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)  Are Vegetation Soil or Hydrology significantly disturbed?	, , ,		_	,		, -			
Are 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?									
Are Vegetation							ent? Yes⊠	№ П	
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.						·			
Hydrophytic Vegetation Present?								eatures et	C
Hydric Soil Present?		Jilo Willig	Juin	piiig	pomit io	oddions, transcots,	important is	<u> </u>	<u>.                                    </u>
Wetland Hydrology Present?         Yes □ No ∑           Within a Wetland?         Yes □ No ∑           Remarks:           VEGETATION – Use scientific names of plants.           Tree Stratum (Plot size: 30)         Absolute Species?         Dominant Indicator Species?         Status         Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)         (A)         Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)         (A)         Total Number of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (B)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)         (A)         (B)         Percent of Dominant Species That Are OBL, FACW, or FAC: 34 (A/B)         (A)         (B)         Pe				Is the	Sampled .	Area			
Note				within	a Wetland	d? Yes ☐ No	) 🛛		
Dominant Indicator % Cover   Species?   Status   Species   Status   S									
Dominant Indicator % Cover   Species?   Status   Species   Status   S									
Dominant Indicator % Cover   Species?   Status   Species   Status   S									
Time Stratum (Plot size: 30)	<b>VEGETATION – Use scientific names of plant</b>	s.							
1. Pseudotsuga menziesii 60 Y FACU 2. Alnus rubra 15 N FAC 3. Acer circinatum 10 N FAC 4. Sapling/Shrub Stratum (Plot size: 15) 1. Acer circinatum 10 Y FAC 3. Acer circinatum 10 Y FAC 3. Acer circinatum 10 Y FAC 4. Prevalence Index worksheet:  Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 33 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number	T. 0 (D					Dominance Test works	heet:		
2. Alnus rubra   15	, <u> </u>	<u> </u>						(4)	
3. Acer circinatum						That Are OBL, FACW, of	FAC: 1	(A)	
A.								(D)	
Sapling/Shrub Stratum (Plot size: 15)   10		10	11		<u> </u>	Species Across Air Strate	1. <u>3</u>	(D)	
Saping/Shrub Stratum		85	= To	otal Cov	er	•		(Δ/R)	
Total % Cover of: Multiply by:	Sapling/Shrub Stratum (Plot size: 15)							(A/D)	
3.		10	<u>Y</u>	<u>F</u>	AC				
4.									
FAC species 37						•			
10									
Herb Stratum (Plot size: 5)   1. Polystichum munitum	J	10	= To	otal Cov	er				
1. Polystichum munitum       2       Y       FACU       Column Totals: 99 (A) 359 (B)       (B)         2. 3. 4. 5. 5. 6. 7. 8. 7. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9.	Herb Stratum (Plot size: 5)	<u></u>		J. 1007					
3.	Polystichum munitum	2	<u>Y</u>	<u>F</u>	ACU				
Hydrophytic Vegetation Indicators:    Dominance Test is >50%     Prevalence Index is ≤3.0¹     Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)     Problematic Hydrophytic Vegetation¹ (Explain)     Problematic Hydrophytic Vegetation¹ (Explain)     Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.     O						Drovolonoo Indov	D/A 2.62		
5.							'		
6.  7.  8.  Woody Vine Stratum (Plot size: 30)  1.  2.  ——————————————————————————————					<del></del>				
7						<del>_</del>			
8									
Moody Vine Stratum (Plot size: 30)  1.									
1		2	= To	otal Cov	er	☐ Problematic Hydroph	nytic Vegetation	<sup>1</sup> (Explain)	
2.  O = Total Cover  Bare Ground in Herb Stratum	Woody Vine Stratum (Plot size: <u>30</u> )					1			
0 = Total Cover Vegetation  % Bare Ground in Herb Stratum % Cover of Biotic Crust Present? Yes □ No ☒			-						
% Bare Ground in Herb Stratum % Cover of Biotic Crust Present? Yes ☐ No ☒	2.					Hydrophytic	· ·		
						Vegetation			
Remarks:		er of Biotic C	Crust _		_	Present? Yes	□ No 🗵		
	Remarks:								

Profile Descrip	ption: (Describ	e to the	depth n	eeded to docun	nent the	indicator	or confir	m the abs	sence of indicators.)
Depth	Matrix				x Feature				
<u>(inches)</u> C	Color (moist)	%	Cold	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	
<u>0-8</u> <u>1</u>	0YR 2/1	100						Sandy lo	oam
l									
		_							
<u> </u>								-	
			<u> </u>						<del></del>
·									
¹Type: C=Cond	centration, D=De	nletion	RM-Rec	luced Matrix CS	Covere	d or Coate	ad Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	dicators: (Appli						od Odria C		dicators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol (A				Sandy Redox (S		,			2 cm Muck (A10)
☐ Histic Epipe	•			Stripped Matrix					Red Parent Material (TF2)
☐ Black Histic				Loamy Mucky M	. ,	(except	MLRA 1))		Very Shallow Dark Surface (TF12)
☐ Hydrogen S	Sulfide (A4)		□ L	oamy Gleyed M	latrix (F2)				Other (Explain in Remarks
	elow Dark Surfa	ce (A11)		Depleted Matrix					
	Surface (A12)			Redox Dark Sur	, ,			0-	
-	ky Mineral (S1)			Depleted Dark S	•	7)			dicators of hydrophytic vegetation and
☐ Sandy Gley	/ea Matrix (54)		Ш	Redox Depressi	ons (F8)				wetland hydrology must be present, unless disturbed or problematic.
Postrictivo I a	yer (if present):								unless disturbed of problematic.
	yer (ii present).								
	es):							Hydrid	c Soil Present? Yes □ No ⊠
				diagram data and	and the	-20			dric based on the other two indicators.
HYDROLOG									
_	ology Indicators								
Primary Indicat	ors (minimum of	one requ	uired; ch						Secondary Indicators (2 or more required)
☐ Surface W	Vater (A1)			☐ Water-Sta <b>4A, and 4B</b> )		es (B9) (	except MI	LRA 1, 2,	☐ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
High Wate	` ,			Salt Crus	` '				Drainage Patterns (B10)
				☐ Aquatic Ir		, ,			☐ Dry-Season Water Table (C2)
☐ Water Ma	,			Hydrogen					Saturation Visible on Aerial Imagery (C9)
	Deposits (B2)			Oxidized				oots (C3)	Geomorphic Position (D2)
☐ Drift Depo				☐ Presence				00)	Shallow Aquitard (D3)
	or Crust (B4)			☐ Recent Iro			,	,	FAC-Neutral Test (D5)
☐ Iron Depo				☐ Stunted o			D1)( <b>LKK</b>	<b>A</b> )	Raised Ant Mounds (D6(LRR A)
	Soil Cracks (B6)		(D.T)	☐ Other (Ex	piain in K	emarks)			☐Frost-Heave Hummocks (D7)
	Visible on Aeria								
	/egetated Conca	ve Surfa	ce (B8)						
Field Observa				5 4 6 1	,				
Surface Water		Yes 🗌	No ⊠	Depth (inches					
Water Table Pr		Yes 🗌	No ⊠	Depth (inches	<i>,</i>				
Saturation Pres (includes capilla	ary fringe)	Yes 🛚	No 🗌	Depth (inches					rology Present? Yes ☐ No 🛚
Describe Reco	rded Data (strea	m gauge	, monito	ring well, aerial p	ohotos, pr	evious ins	spections)	, if availab	ole:
Remarks: Hydr	ology indicator li	kely resu	It of rece	ent unusually we	t weather	; despite	presence	of saturati	ion, this does not reflect wetland hydrology.

Project/Site: TAL-1572		City/C	County:	Federal W	ay/King County	Sampling [	Date: <u>12/19/2</u>	2015
Applicant/Owner: IRG/Weyerhauser					State: WA	Sampling F	Point: <u>BB-W</u>	ET1
Investigator(s): JMM, DRT			§	Section, To	wnship, Range: <u>S15 T21N</u>	I R4E		
Landform (hillslope, terrace, etc.): Depressional		Loca	al relief	(concave,	convex, none): Concave		_ Slope (%)	: <u>1-2%</u>
Subregion (LRR): <u>LRR-A</u>	_ Lat: 47.30	09056	6		Long: <u>-122.289374</u>		Datum: NAI	D83
Soil Map Unit Name: Alderwood gravel sandy loam, 0-8% sl	opes				NWI classificat	tion: PFO		
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sign	-					ent? Yes [	⊠ No □	
Are Vegetation, Soil, or Hydrology natu					ed, explain any answers in			
SUMMARY OF FINDINGS – Attach site map								s. etc.
	<u></u>		.pg	, роши то	<u>, , , , , , , , , , , , , , , , , , , </u>	portar	11.0010.0	<u>0, 0.0.</u>
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			Is the	Sampled	Area			
Wetland Hydrology Present? Yes ⊠ No □			withi	n a Wetlan	d? Yes⊠ No	0 🗆		
Remarks:								
VEGETATION – Use scientific names of plant	ts.							
The state of the s	Absolute	Dom	ninant	Indicator	Dominance Test works	heet:		
<u>Tree Stratum</u> (Plot size: <u>30</u> )	% Cover				Number of Dominant Sp			
1. Alnus rubra	50	Υ	!	FAC	That Are OBL, FACW, o			(A)
2. Populus balsamifera	<u>15</u>	Υ	!	FAC	Total Number of Domina	ant		
3.					Species Across All Strata			(B)
4.					Percent of Dominant Spe	ocios		
0 1 (0) 1 0 (0) (0)	65	= To	otal Co	ver	That Are OBL, FACW, o		00	(A/B)
Sapling/Shrub Stratum (Plot size: 15)	45	.,		<b>-</b> 10	Prevalence Index work	ahaat.		
1. Rubus spectabilis	45	<u>Y</u>		FAC	Total % Cover of:		Aultiply by:	
2.					OBL species 0			
3.					FACW species 0			
4		-	<del></del> -		FAC species 0			
J	45		otal Co	wer .	FACU species 0			
Herb Stratum (Plot size: 5)	43	- 11	olai Co	VCI	UPL species 0			
1.					Column Totals: 0			
2.					<u>-</u>	( ' ')		_ (-)
3.					Prevalence Index			
4.					Hydrophytic Vegetation	n Indicators	s:	
5.								
6.					Prevalence Index is:			
7.					Morphological Adapt data in Remarks			
8.					☐ Problematic Hydroph	·	,	
Mandy Vine Stratum (Plat size, 20)	0	= To	otal Co	ver	Troblematio Tryaropi	lytio vogeta	mon (Explai	,
Woody Vine Stratum (Plot size: 30) 1.					<sup>1</sup> Indicators of hydric soil	and wetland	d hydrology :	must
2.		-		_	be present, unless distur			
	0		otal Co	wer ·	Hydrophytic			
					Vegetation	<b>-</b>	-	
	er of Biotic (	Crust			Present? Yes	No 🗆	<u></u>	
Remarks:								

Depth									
(inches)	Matrix Color (moist)	%	Colo	r (moist)	ox Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-8	10YR 2/2	100						Sandy loa	m
0.0	1011(2/2	100						<u>Oaridy ioa</u>	
	-		<del>-</del>						<del></del>
								-	
									<del></del> -
-								-	
									<del></del>
	oncentration, D=De						ed Sand Gr		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
_	Indicators: (Appl	icable to				ed.)			cators for Problematic Hydric Soils <sup>3</sup> :
Histosol	• •			Sandy Redox (					2 cm Muck (A10)
	pipedon (A2)			Stripped Matrix	, ,	(avaant	MI DA 4\\		ed Parent Material (TF2)
☐ Black His	stic (A3) n Sulfide (A4)			Loamy Mucky I oamy Gleyed I		(except	WILKA 1))		ery Shallow Dark Surface (TF12) ther (Explain in Remarks
	d Below Dark Surfa	ce (A11)		epleted Matrix					THE (Explain in Nemarks
-	ark Surface (A12)	(/ (/ (/ / / / / / / / / / / / / / / /	_	Redox Dark Su	` '				
	lucky Mineral (S1)			Depleted Dark		7)		<sup>3</sup> Indio	cators of hydrophytic vegetation and
-	Bleyed Matrix (S4)			Redox Depress		,			etland hydrology must be present,
								ur	nless disturbed or problematic.
Restrictive	Layer (if present):								
Type:									
Depth (in	ches):							Hydric S	Soil Present? Yes ⊠ No □
				completely un	der water,	soil pit wa	as dug whe	re it was dr	ier near the wetland boundary. Assumed
hydric soils f	rom strong hydrolo	gic indica	itors.						
HYDROLO	·CV								
_	drology Indicator			1 1141 4					
	cators (minimum of	one requ	iired; che						
⊠ Surface	e Water (A1)					(5.0) (			econdary Indicators (2 or more required)
☐ High W	/ater Table (A2)					es (B9) (e	except ML		econdary Indicators (2 or more required)  Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
	ator rabio (rtz)					es (B9) (	except ML		☐ Water Stained Leaves (B9) (MLRA 1, 2,
☐ Saturat	tion (A3)			AA, and 4B) ☐ Salt Cru		, , ,	except ML		$\hfill \square$ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
	` '			A, and 4B) ☐ Salt Cru ☐ Aquatic	st (B11)	es (B13)	except ML		<ul><li>☐ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li><li>☐ Drainage Patterns (B10)</li></ul>
☐ Water I	tion (A3)			AA, and 4B)  ☐ Salt Cru ☐ Aquatic ☐ Hydroge	st (B11) Invertebrate	es (B13) Odor (C1)	·	RA 1, 2,	<ul> <li>☐ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>☐ Drainage Patterns (B10)</li> <li>☐ Dry-Season Water Table (C2)</li> </ul>
☐ Water I	tion (A3) Marks (B1)			AA, and 4B)  ☐ Salt Cru ☐ Aquatic ☐ Hydroge ☐ Oxidized	st (B11) Invertebrate n Sulfide C	es (B13) odor (C1) eres along	g Living Ro	RA 1, 2,	<ul> <li>□ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> </ul>
☐ Water I☐ Sedime	tion (A3) Marks (B1) ent Deposits (B2)			AA, and 4B) Salt Cru Aquatic Hydroge Oxidized	st (B11) Invertebrate n Sulfide C I Rhizosphe	es (B13) dor (C1) eres alon ed Iron (C	g Living Ro C4)	RA 1, 2,	<ul> <li>□ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> <li>□ Geomorphic Position (D2)</li> </ul>
☐ Water I☐ Sedime ☐ Drift De	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)			A, and 4B)  Salt Cru  Aquatic  Hydroge  Oxidized  Presence  Recent I	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduc	es (B13) odor (C1) eres alon ed Iron (C ion in Till	g Living Ro (24) ed Soils (C	RA 1, 2, oots (C3)	<ul> <li>□ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> <li>□ Geomorphic Position (D2)</li> <li>□ Shallow Aquitard (D3)</li> </ul>
☐ Water I☐ Sedime ☐ Drift De ☐ Algal M☐ Iron De	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4)			A, and 4B)  Salt Cru  Aquatic  Hydroge  Oxidized  Presenc  Recent I  Stunted	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reductron Reduct	es (B13) dor (C1) eres along ed Iron (C ion in Till	g Living Ro (24) ed Soils (C	RA 1, 2, oots (C3)	<ul> <li>Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> <li>□ Geomorphic Position (D2)</li> <li>□ Shallow Aquitard (D3)</li> <li>□ FAC-Neutral Test (D5)</li> </ul>
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	al Imagery	/ (B7)	A, and 4B)  Salt Cru  Aquatic  Hydroge  Oxidized  Presenc  Recent I  Stunted	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressec	es (B13) dor (C1) eres along ed Iron (C ion in Till	g Living Ro (24) ed Soils (C	RA 1, 2, oots (C3)	<ul> <li>Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> <li>□ Geomorphic Position (D2)</li> <li>□ Shallow Aquitard (D3)</li> <li>□ FAC-Neutral Test (D5)</li> <li>□ Raised Ant Mounds (D6(LRR A)</li> </ul>
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6)		` ,	A, and 4B)  Salt Cru  Aquatic  Hydroge  Oxidized  Presenc  Recent I  Stunted	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressec	es (B13) dor (C1) eres along ed Iron (C ion in Till	g Living Ro (24) ed Soils (C	RA 1, 2, oots (C3)	<ul> <li>Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> <li>□ Geomorphic Position (D2)</li> <li>□ Shallow Aquitard (D3)</li> <li>□ FAC-Neutral Test (D5)</li> <li>□ Raised Ant Mounds (D6(LRR A)</li> </ul>
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca		` ,	A, and 4B)  Salt Cru  Aquatic  Hydroge  Oxidized  Presenc  Recent I  Stunted	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressec	es (B13) dor (C1) eres along ed Iron (C ion in Till	g Living Ro (24) ed Soils (C	RA 1, 2, oots (C3)	<ul> <li>Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> <li>□ Geomorphic Position (D2)</li> <li>□ Shallow Aquitard (D3)</li> <li>□ FAC-Neutral Test (D5)</li> <li>□ Raised Ant Mounds (D6(LRR A)</li> </ul>
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeria by Vegetated Concar evations:		` ,	A, and 4B)  Salt Cru  Aquatic  Hydroge  Oxidized  Presenc  Recent I  Stunted	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressec xplain in Re	es (B13) odor (C1) eres along ed Iron (C ion in Till d Plants ( emarks)	g Living Ro (24) ed Soils (C	RA 1, 2, oots (C3)	<ul> <li>Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> <li>□ Geomorphic Position (D2)</li> <li>□ Shallow Aquitard (D3)</li> <li>□ FAC-Neutral Test (D5)</li> <li>□ Raised Ant Mounds (D6(LRR A)</li> </ul>
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeria by Vegetated Concarvations: ere Present?	ave Surfa	ce (B8)	A, and 4B)  Salt Cru  Aquatic  Hydroge  Oxidized  Presence  Recent I  Stunted  Other (E	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressed xplain in Reduct	es (B13) dor (C1) eres along ed Iron (C ion in Till d Plants ( emarks)	g Living Ro (24) ed Soils (C	RA 1, 2, oots (C3)	<ul> <li>Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> <li>□ Geomorphic Position (D2)</li> <li>□ Shallow Aquitard (D3)</li> <li>□ FAC-Neutral Test (D5)</li> <li>□ Raised Ant Mounds (D6(LRR A)</li> </ul>
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeria by Vegetated Conca evations: er Present? Present?	ave Surfac	ce (B8)	A, and 4B)  Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted Other (E	st (B11) Invertebrate In Sulfide C I Rhizosphe I Reduct I	es (B13) dor (C1) eres along ed Iron (C ion in Till d Plants ( emarks)	g Living Ro c4) ed Soils (C D1)(LRR A	nots (C3)	<ul> <li>Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> <li>□ Geomorphic Position (D2)</li> <li>□ Shallow Aquitard (D3)</li> <li>□ FAC-Neutral Test (D5)</li> <li>□ Raised Ant Mounds (D6(LRR A)</li> </ul>
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes cal	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeria by Vegetated Concar evations: ere Present? Present? fresent? pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes	No D No No No D	AA, and 4B)  Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted Other (E	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressed xplain in Re s): 2 s): 1-2	es (B13) Podor (C1) Pores along ed Iron (C ion in Till d Plants (i emarks)	y Living Ro (24) ed Soils (C D1)(LRR A	RA 1, 2, oots (C3) 66) and Hydrol	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)
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes cal	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeria by Vegetated Conca evations: er Present? Present?	Yes  Yes  Yes  Yes  Yes  Yes	No D No No No D	AA, and 4B)  Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted Other (E	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressed xplain in Re s): 2 s): 1-2	es (B13) Podor (C1) Pores along ed Iron (C ion in Till d Plants (i emarks)	y Living Ro (24) ed Soils (C D1)(LRR A	RA 1, 2, oots (C3) 66) and Hydrol	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)
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca) Describe Re	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeria by Vegetated Concar evations: ere Present? Present? eresent? pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes	No D No No No D	AA, and 4B)  Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted Other (E	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressed xplain in Re s): 2 s): 1-2	es (B13) Podor (C1) Pores along ed Iron (C ion in Till d Plants (i emarks)	y Living Ro (24) ed Soils (C D1)(LRR A	RA 1, 2, oots (C3) 66) and Hydrol	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)
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes cal	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeria by Vegetated Concar evations: ere Present? Present? eresent? pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes	No D No No No D	AA, and 4B)  Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted Other (E	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressed xplain in Re s): 2 s): 1-2	es (B13) Podor (C1) Pores along ed Iron (C ion in Till d Plants (i emarks)	y Living Ro (24) ed Soils (C D1)(LRR A	RA 1, 2, oots (C3) 66) and Hydrol	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)
☐ Water I ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca) Describe Re	tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeria by Vegetated Concar evations: ere Present? Present? eresent? pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes	No D No No No D	AA, and 4B)  Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted Other (E	st (B11) Invertebrate n Sulfide C I Rhizosphe e of Reduct ron Reduct or Stressed xplain in Re s): 2 s): 1-2	es (B13) Podor (C1) Pores along ed Iron (C ion in Till d Plants (i emarks)	y Living Ro (24) ed Soils (C D1)(LRR A	RA 1, 2, oots (C3) 66) and Hydrol	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)

Project/Site: Weyerhaeuser		City/C	ounty: <u>Federa</u>	l Way/King	Sampling Date:4/9/1	6
Applicant/Owner: Federal Way Campus, LLC				State: WA	Sampling Point: BD-	UPL1
Investigator(s): JMM, DRT			Section,	Township, Range: Secti	ion 16, T21N, R4E	
Landform (hillslope, terrace, etc.): Terrace		Loca	Il relief (conca	ve, convex, none): None	Slope (	%): <u>0-1</u>
Subregion (LRR): <u>LRR A</u>	_ Lat: 47.30	08979	1	Long: <u>-122.290309</u>	Datum: N	AD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	pes		NWI class	sification: None	
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation No, Soil No, or Hydrology No significantly di	-			rcumstances" present?		
Are Vegetation No, Soil No, or Hydrology No naturally proble				i ain any answers in Rem		
SUMMARY OF FINDINGS – Attach site map						res, etc.
				,		•
Hydrophytic Vegetation Present? Yes ☐ No ☐ Hydric Soil Present? Yes ☐ No ☐ Yes ☐ No ☐ N			Is the Sampl		<b>-</b> <del>-</del>	
Wetland Hydrology Present? Yes □ No ☒			within a Wet	land? Yes	☐ No ⊠	
Remarks:		1				
VEGETATION – Use scientific names of plan	ts.					
Trace Christians (Plat circs 204)	Absolute		inant Indicato		orksheet:	
Tree Stratum (Plot size: 30ft)  1. Alnus rubra	40	Yes	cies? Status FAC	<ul> <li>Number of Dominar</li> <li>That Are OBL, FAC</li> </ul>		(A)
2. Acer circinatum		Yes				_ (^)
3. Populus balsamifera				Total Number of Do Species Across All		_ (B)
Pseudotsuga menziesii			FACU	·		_ (D)
	90	= To	otal Cover	Percent of Dominar That Are OBL. FAC	nt Species CW, or FAC: <u>50</u>	(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)						_
1. None				Prevalence Index	of: Multiply by:	_
2				·	x 1 =	
3. 4.					x 2 =	
5.				•	x 3 =	
	0			•	x 4 =	
Herb Stratum (Plot size: 5ft)				UPL species	x 5 =	
1. Polystichum munitum		Yes		Coldilli Totals.	(A)	(B)
2. Lamiastrum galeobdolon	1	No	<u>NL</u>		ndex = B/A =	
3				Hydrophytic Veget		_
5.				☐ Dominance Tes		
6.				. ☐ Prevalence Inde	ex is ≤3.0¹	
7.					Adaptations¹ (Provide supp	
8.					narks or on a separate she	•
	21	= To	otal Cover	☐ Problematic Hy	drophytic Vegetation <sup>1</sup> (Exp	olain)
Woody Vine Stratum (Plot size: 15ft)		.,	=	<sup>1</sup> Indicators of hydric	c soil and wetland hydrolog	ny muet
1. Rubus armeniacus		Yes_			disturbed or problematic.	jy must
2. Rubus laciniatus	<u>5</u> 35	<u>No</u>	FACU otal Cover	Hydrophytic		
				Vegetation	,	
	er of Biotic (	Crust _		Present?	Yes □ No ⊠	
Remarks:						

Profile Desci	ription: (Describ	e to the de	pth ne	eded to docu	ment the i	indicator	or confir	m the abse	ence of indicators.)	
Depth	Matrix				ox Feature			. <u>_</u>		
(inches)	Color (moist)		Colo	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks	
					_					
		_						-		
								-		
								-		
¹Type: C=Co	ncentration, D=D	enletion P	M-Radi	uced Matrix C	S-Covered	d or Coate	ad Sand G	raine	<sup>2</sup> Location: PL=Pore Lining, M=Matrix	
	ndicators: (Appl						od Odrid C		icators for Problematic Hydric Soils	
Histosol (				Sandy Redox (		,			2 cm Muck (A10)	
☐ Histic Epi	,			Stripped Matrix					Red Parent Material (TF2)	
☐ Black Hist				oamy Mucky I	Mineral (F1	(except	MLRA 1))		Very Shallow Dark Surface (TF12)	
☐ Hydrogen	Sulfide (A4)			oamy Gleyed I	Matrix (F2)				Other (Explain in Remarks	
	Below Dark Surfa	ice (A11)		epleted Matrix	. ,					
	k Surface (A12)		_	Redox Dark Su	, ,	_\		2.		
	icky Mineral (S1)			Depleted Dark Redox Depress	,	7)			licators of hydrophytic vegetation and	
	eyed Matrix (S4)		□F	redox Depress	sions (Fo)				wetland hydrology must be present, unless disturbed or problematic.	
Restrictive I	ayer (if present):							'	unicos disturbed of problematic.	
_	ayer (ii present)									
	hes):		_					Hydric	Soil Present? Yes ☐ No ☒	
	oossible to dig - e		mnact :	and suspector	l old loggin	a road		Tiyano		
Remarks. Imp	oossible to dig - e.	xiremely co	прасс	and suspected	i ola loggiri	y roau				
HYDROLOG	<b>SY</b>									
Wetland Hyd	rology Indicator	s:								
Primary Indica	ators (minimum o	f one requi	ed; che	eck all that app	ly)				Secondary Indicators (2 or more requir	ed)
☐ Surface	Water (A1)			<ul><li>☐ Water-Stand 4A, and 4B)</li></ul>		res (B9) (	except MI	_RA 1, 2,	☐ Water Stained Leaves (B9) ( <b>ML 4A, and 4B)</b> )	RA 1, 2,
☐ High Wa	ater Table (A2)			☐ Salt Crus	st (B11)				☐ Drainage Patterns (B10)	
☐ Saturation				☐ Aquatic I		. ,			☐ Dry-Season Water Table (C2)	
	larks (B1)				n Sulfide C				Saturation Visible on Aerial Image	gery (C9)
	nt Deposits (B2)				Rhizosph			oots (C3)	Geomorphic Position (D2)	
-	posits (B3)				e of Reduc				☐ Shallow Aquitard (D3)	
_	at or Crust (B4)				ron Reduc		,	,	☐ FAC-Neutral Test (D5)	
	posits (B5)				or Stresse		D1)( <b>LRR</b> /	A)	Raised Ant Mounds (D6(LRR A	)
l	Soil Cracks (B6)				xplain in R	emarks)			☐Frost-Heave Hummocks (D7)	
	on Visible on Aeria	0 ,	` '							
	Vegetated Conc	ave Surface	e (B8)							
Field Observ	ations:									
Surface Wate	r Present?	Yes 🗌 I	Vo ⊠	Depth (inche	s):					
Water Table F	Present?	Yes 🗌 I	Vo ⊠	Depth (inche	s):					
Saturation Pro (includes cap	illary fringe)		No 🛛	Depth (inche					ology Present? Yes ☐ No ⊠	
Describe Rec	orded Data (strea	ım gauge, ı	nonitori	ing well, aerial	photos, pr	evious ins	spections)	, if availabl	e:	
Remarks: Re	cord rainfall in red	ent months	S.							

Project/Site: Weyerhaeuser		City/Co	ounty: <u>Fe</u>	ederal W	Nay/King Sampling Date: 12/19/201			
Applicant/Owner: Federal Way Campus, LLC					State: WA	_ Sampling Point: BD-WET1		
Investigator(s): JMM, DRT			Sec	ection, To	wnship, Range: Section	16, T21N, R4E		
Landform (hillslope, terrace, etc.): Terrace		Local	l relief (c	concave,	convex, none): None	Slope (%): <u>1-3</u>		
Subregion (LRR): <u>LRR A</u>	Lat: 47.30	08804			Long: <u>-122.28969</u>	Datum: NAD83		
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8								
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ır? Ye	es 🛛 N	No □ (If	no, explain in Remarks.)	)		
Are Vegetation No, Soil No, or Hydrology No significantly di	isturbed?	Α	re "Norm	mal Circu	mstances" present? Ye	s 🛭 No 🗌		
Are Vegetation No, Soil No, or Hydrology No naturally proble	ematic?	(If	needed	d, explain	any answers in Remarks	s.)		
SUMMARY OF FINDINGS - Attach site map	showing	samp	pling p	point lo	ocations, transects	, important features, etc.		
Hydrophytic Vegetation Present? Yes ⊠ No □								
Hydric Soil Present? Yes ⊠ No □				Sampled		. 🗖		
Wetland Hydrology Present? Yes ⊠ No □		,	within a	a Wetlan	d? Yes ⊠ N	10 [		
Remarks:		1						
VEGETATION – Use scientific names of plan	ts.							
Tree Stratum (Plot size: 30ft)	Absolute <u>% Cover</u>		inant Ind		Dominance Test work			
1. Fraxinus latifolia		-			Number of Dominant S That Are OBL, FACW,			
2.								
3.					Total Number of Domin Species Across All Stra			
4.					Percent of Dominant Sp			
Conline/Chrub Ctratum (Diet circu 45ft)	65	= Tot	tal Cove	er		or FAC: <u>50</u> (A/B)		
Sapling/Shrub Stratum (Plot size: 15ft)  1. Rubus spectabilis	60	Vec	EΛ	۸۲	Prevalence Index wor	ksheet:		
2.						Multiply by:		
3.						x 1 = 0		
4.						x 2 = <u>130</u>		
5.					FAC species 62	x 3 = <u>186</u>		
	60	= Tot	otal Cove	er	FACU species 15	x 4 = <u>60</u>		
Herb Stratum (Plot size: 5ft)	15	Voo	ΓΛ	٨		x 5 = <u>0</u>		
1. Polystichum munitum	<u>15</u>	Yes	<u>FA</u>	ACU_	Column Totals: 142	(A) <u>376</u> (B)		
3.					Prevalence Index	= B/A = 2.64		
4.				-	Hydrophytic Vegetation	on Indicators:		
5.					□ Dominance Test is	>50%		
6.					□ Prevalence Index is	; ≤3.0 <sup>1</sup>		
7.				_		otations <sup>1</sup> (Provide supporting s or on a separate sheet)		
8.						ohytic Vegetation¹ (Explain)		
Woody Vine Stratum (Plot size: 15ft)	<u>15</u>	= Tot	tal Cove	er		my no regenation (Explain)		
1. Rubus armeniacus	2	Yes	FA	AC		il and wetland hydrology must		
2.					be present, unless distu	urbed or problematic.		
	2	= Tot	tal Cove	er	Hydrophytic			
% Bare Ground in Herb Stratum <u>85</u> % Cove	er of Biotic (	Crust			Vegetation Present? Ye	s⊠ No□		
Remarks:				_		<del>_</del>		

Profile Des Depth	•			Pod	ox Feature	•			
(inches)	Color (moist)	%	Colo	r (moist)	<u>%</u>		Loc <sup>2</sup>	Texture	Remarks
0-12	10YR 2/2	100						Loam	
<u> </u>	101112/2					-	-	Louin	
			_		_				
			_						
			_						
	_		_		_			-	<u> </u>
	Concentration, D=D						ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
-	Indicators: (Appl	icable to				ed.)			cators for Problematic Hydric Soils <sup>3</sup> :
Histosol	` '			Sandy Redox (					2 cm Muck (A10)
	pipedon (A2) istic (A3)			Stripped Matrix .oamy Mucky	, ,	(ovcont	MI DA 1\\		Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
_	en Sulfide (A4)			oamy Gleyed		ехсері	WILKA I))		Other (Explain in Remarks
	d Below Dark Surfa	ce (A11)		epleted Matrix	, ,				one (Explain in Nemarks
•	ark Surface (A12)	00 (/ (/ / /		Redox Dark Su					
☐ Sandy N	Mucky Mineral (S1)			Depleted Dark		7)		<sup>3</sup> Indi	cators of hydrophytic vegetation and
☐ Sandy C	Gleyed Matrix (S4)		□ F	Redox Depres	sions (F8)			W	etland hydrology must be present,
								u	nless disturbed or problematic.
Restrictive	Layer (if present):								
Type:									
Depth (ir	nches):							Hydric	Soil Present? Yes 🛛 No 🗌
HYDBOLO	ncv								
HYDROLO									
•	drology Indicator			1 11 41 4				•	
	icators (minimum o	one requ	ired; che			<b>/=</b> -> <i>/</i>			econdary Indicators (2 or more required)
	e Water (A1)			☐ Water-St 4A, and 4B	)	'es (B9) (e	except ML	.RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
_ •	Vater Table (A2)			☐ Salt Cru	` ,	(5.40)			Drainage Patterns (B10)
	ation (A3)			☐ Aquatic					☐ Dry-Season Water Table (C2)
	Marks (B1)			Hydroge		` '		(- (00)	Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)				d Rhizosph			oots (C3)	Geomorphic Position (D2)
	eposits (B3)				e of Reduc			`C\	Shallow Aquitard (D3)
_	Mat or Crust (B4) eposits (B5)				or Stresse		,	,	☐ FAC-Neutral Test (D5) ☐ Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)				explain in R		DI)( <b>LIXIX A</b>	•)	Frost-Heave Hummocks (D7)
	tion Visible on Aeria	al Imagon	, (P7)	Other (E	.хрішіі і і і	ornarko)			I rost ricave riaminoske (57)
	ly Vegetated Conc		` '						
Field Obse		ave Surial	Je (D0)						
		Yes ⊠	No 🗌	Depth (inche	nc): 1 2				
		162		. ,					
Surface Wa		Voc 🏻	No $\square$		S). I-Z				
Surface Wa	Present?	Yes ⊠	No 🗆	Depth (inche			10/-4		Janu Brasanta Vas M. Na 🗆
Surface Wa Water Table Saturation F	e Present? Present?	Yes ⊠ Yes ⊠	No 🗌 No 🗍	Depth (inche			Wet	land Hydro	ology Present? Yes ⊠ No □
Surface Wa Water Table Saturation F (includes ca	Present?	Yes 🛚	No 🗌	Depth (inche	es): <u>0</u>	evious ins			
Surface Wa Water Table Saturation F (includes ca	e Present? Present? apillary fringe)	Yes 🛚	No 🗌	Depth (inche	es): <u>0</u>	evious ins			
Surface Wa Water Table Saturation F (includes ca Describe Re	e Present? Present? apillary fringe)	Yes ⊠ m gauge,	No 🗌 monitori	Depth (inche	es): <u>0</u>	evious ins			
Surface Wa Water Table Saturation F (includes ca Describe Re	e Present? Present? apillary fringe) ecorded Data (strea	Yes ⊠ m gauge,	No 🗌 monitori	Depth (inche	es): <u>0</u>	evious ins			

Project/Site: Weyerhaeuser		City/Co	ounty:	Federal W	/ay/King	Sampling Date:4/9/16		
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: BS (N	I)-UPL	
Investigator(s): Richard Tveten			s	Section, To	wnship, Range: Section 1	6, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Local	l relief	(concave,	convex, none): concave	Slope (%)	): <u>0</u>	
Subregion (LRR): <u>LRR A</u>	Lat: 47.30	09008	3		Long: <u>-122.295682</u>	Datum: NA	D83	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	oes			NWI classifica	ition: None		
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	es 🛛	No ☐ (If	no, explain in Remarks.)			
Are Vegetation No, Soil No, or Hydrology No significantly di	sturbed?	Α	Are "No	rmal Circu	mstances" present? Yes	s ⊠ No □		
Are Vegetation No, Soil No, or Hydrology No naturally proble	ematic?	(If	f neede	ed, explain	any answers in Remarks	)		
SUMMARY OF FINDINGS - Attach site map	showing	samı	pling	point lo	ocations, transects,	important feature	es, etc.	
Hydrophytic Vegetation Present? Yes ☐ No ☒								
Hydric Soil Present? Yes ☐ No ☒				Sampled		lo M		
Wetland Hydrology Present? Yes ⊠ No □			within	n a Wetlan	d? Yes □ N	0 🔯		
Remarks: SP located within generally flat area around wet	and.							
VEGETATION – Use scientific names of plant								
Tree Stratum (Plot size: 30ft)	Absolute % Cover			ndicator Status	Dominance Test works			
1. Thuja plicata					Number of Dominant Sp That Are OBL, FACW, o	or FAC: <u>2</u>	(A)	
2					Total Number of Domina			
3.					Species Across All Strat		(B)	
4.					Percent of Dominant Sp	ecies		
Sapling/Shrub Stratum (Plot size: 15ft)	30	= To	otal Cov	ver	That Are OBL, FACW, o		(A/B)	
1. Gaultheria shallon	40	Yes	F	FACU	Prevalence Index work	sheet:		
2. Rubus spectabilis				FAC	Total % Cover of:	Multiply by:		
3. Oemleria cerasiformis				FACU	OBL species	x 1 =	<u> </u>	
4.					FACW species	x 2 =	_	
5						x 3 = <u>180</u>		
Herb Stratum (Plot size: 5ft)	90	= To	otal Cov	ver	FACU species 110			
1. Polystichum munitum_	30	Yes	F	FACU	UPL species  Column Totals: 170			
2. Rubus ursinus		Yes		FACU	Column Totals: 170	(A) <u>620</u>	(B)	
3.					Prevalence Index	= B/A = 3.6		
4.					Hydrophytic Vegetatio			
5.					☐ Dominance Test is >			
6.					☐ Prevalence Index is			
7.	<del></del>					tations <sup>1</sup> (Provide supports or on a separate sheet		
8.	50		etal Co	·····	☐ Problematic Hydropl	hytic Vegetation <sup>1</sup> (Expla	iin)	
Woody Vine Stratum (Plot size: 15ft)	50	= 10	Jiai Co	vei				
1. None					<sup>1</sup> Indicators of hydric soil be present, unless distu		must	
2.					'	Thea or problematic.		
	0	= To	otal Cov	ver	Hydrophytic Vegetation			
% Bare Ground in Herb Stratum 50 % Cove	er of Biotic C	Crust <u>0</u>	0			s □ No ⊠		
Remarks:								

	cription: (Descri			Dod	ov Ecoturos				
Depth (inches)	Matrix Color (moist)	%	Colo	r (moist)	ox Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-2									Duff
2-8	10YR 3/2	100						Sandy loam	
8-16	10YR 4/3	100						Silty loam	
0-10	101K 4/3	100						Silly Idaili	-
	-								
									_
¹Type: C=C	oncentration, D=D	epletion,	RM=Red	uced Matrix, C	S=Covered	or Coate	d Sand G	rains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRR	s, unless othe	rwise noted	d.)			tors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	, ,			Sandy Redox (					m Muck (A10)
	pipedon (A2)			Stripped Matrix	. ,				d Parent Material (TF2)
☐ Black Hi	` '			oamy Mucky I		except l	MLRA 1))		ry Shallow Dark Surface (TF12)
_ , .	n Sulfide (A4) d Below Dark Surfa	nco (A11)		oamy Gleyed I epleted Matrix				☐ Oth	er (Explain in Remarks
	ark Surface (A12)	ace (ATT)		Redox Dark Su	` '				
	lucky Mineral (S1)			Depleted Dark	, ,	)		<sup>3</sup> Indicat	tors of hydrophytic vegetation and
	Bleyed Matrix (S4)		□ F	Redox Depress	sions (F8)				land hydrology must be present,
								unle	ess disturbed or problematic.
Restrictive	Layer (if present)	:							
Type:									
Depth (in	ches):							Hydric So	il Present? Yes ☐ No ⊠
Remarks: No	o hydric soil indica	tors ident	fied					•	
HYDROLO	GY								
	drology Indicator	s:							
•	cators (minimum c		uired: che	eck all that app	lv)			Seco	ondary Indicators (2 or more required)
	e Water (A1)		ao.a, oe	☐ Water-St		s (B9) ( <b>e</b>	xcept ML		☐ Water Stained Leaves (B9) (MLRA 1,
_	,			4A, and 4B)		- ( - / (-	•		A, and 4B))
_ •	/ater Table (A2)			☐ Salt Crus	st (B11)			<del>-</del>	☐ Drainage Patterns (B10)
Saturar     Saturar	tion (A3)			☐ Aquatic	Invertebrates	s (B13)			☐ Dry-Season Water Table (C2)
	Marks (B1)			☐ Hydroge		. ,			Saturation Visible on Aerial Imagery (
	ent Deposits (B2)			Oxidized			_	oots (C3)	Geomorphic Position (D2)
	eposits (B3)			Presenc				L	Shallow Aquitard (D3)
_	Mat or Crust (B4)			☐ Recent I			,	,	FAC-Neutral Test (D5)
I I I Iron De	eposits (B5)			□ Stunted	or Stressed	Piants (L	)1)(LKK A	<b>A</b> )	Raised Ant Mounds (D6( <b>LRR A</b> )
				Othor (E	valain in Bar	marka)			TErect Heave Hummooks (D7)
☐ Surface	e Soil Cracks (B6)	-1.1	(DZ)	Other (E	xplain in Rer	marks)			Frost-Heave Hummocks (D7)
☐ Surface	e Soil Cracks (B6) ion Visible on Aeri			☐ Other (E	xplain in Rer	marks)			]Frost-Heave Hummocks (D7)
☐ Surface☐ Inundat☐ Sparsel	e Soil Cracks (B6) ion Visible on Aeri ly Vegetated Conc			☐ Other (E	xplain in Rer	marks)	1		□Frost-Heave Hummocks (D7)
☐ Surface ☐ Inundat ☐ Sparsel Field Obser	e Soil Cracks (B6) ion Visible on Aeri ly Vegetated Conc vations:	ave Surfa	ce (B8)						]Frost-Heave Hummocks (D7)
☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat	e Soil Cracks (B6) ion Visible on Aeri ly Vegetated Conc vations: ter Present?	ave Surfa	ce (B8)	Depth (inche	s):				]Frost-Heave Hummocks (D7)
☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table	e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: ter Present? Present?	ave Surfa  Yes □  Yes □	ce (B8)  No ⊠  No ⊠	Depth (inche	s):				
☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P	e Soil Cracks (B6) ion Visible on Aeri ly Vegetated Conc vations: eer Present? Present?	ave Surfa	ce (B8)	Depth (inche	s):		Wetl		□Frost-Heave Hummocks (D7) gy Present? Yes ☑ No □
☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: ter Present? Present?	Yes ☐ Yes ☐ Yes ⊠	No 🖂 No 🖂	Depth (inche Depth (inche Depth (inche	s): s):			land Hydrolo	
☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	e Soil Cracks (B6) ion Visible on Aeri ly Vegetated Conc vations: ter Present? Present? pillary fringe)	Yes ☐ Yes ☐ Yes ⊠	No 🖂 No 🖂	Depth (inche Depth (inche Depth (inche	s): s):			land Hydrolo	
☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	e Soil Cracks (B6) ion Visible on Aeri ly Vegetated Conc vations: ter Present? Present? pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	No 🖾 No 🖾 No 🖂 No 🖂 no itori	Depth (inche Depth (inche Depth (inche	s): s): s): <u>9</u> photos, prev	vious ins	pections),	and Hydrologif available:	
☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	e Soil Cracks (B6) ion Visible on Aeri ly Vegetated Conc vations: ter Present? Present? Present? pillary fringe) corded Data (strea	Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	No 🖾 No 🖾 No 🖂 No 🖂 no itori	Depth (inche Depth (inche Depth (inche	s): s): s): <u>9</u> photos, prev	vious ins	pections),	and Hydrologif available:	

Project/Site: Weyerhaeuser	(	City/C	County	/: <u>Federal W</u>	/ay/King	Sampling Date: 4/9/1	6	
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: BS (N)-WET1		
Investigator(s): Richard Tveten				Section, To	wnship, Range: Section 1	6, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	of (concave,	convex, none): concave	Slope (	%): <u>4</u>	
Subregion (LRR): <u>LRR A</u>	Lat: 47.30	09008	3		Long: -122.295682	Datum: N	AD83	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sign	•			•	rmal Circumstances" pres		1	
Are Vegetation, Soil, or Hydrology natu	-				ed, explain any answers ir		_	
SUMMARY OF FINDINGS – Attach site map s							res. etc.	
	, , , , , , , , , , , , , , , , , , ,		· <b>P</b> ·····	<u> </u>	, , , , , , , , , , , , , , , , , , , ,	portant route	100, 010.	
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			Is th	e Sampled	Area			
Wetland Hydrology Present? Yes ☒ No ☐			with	in a Wetlan	d? Yes ⊠ N	o 🗌		
Remarks: Wetland located adjacent to parking lot.								
<b>VEGETATION – Use scientific names of plant</b>	s.							
T. 0 (D	Absolute				Dominance Test works	sheet:		
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Sp		(4)	
1. None					That Are OBL, FACW, o	л FAC. <u>Z</u>	_ (A)	
3.					Total Number of Domina Species Across All Strat		(B)	
4.							_ (D)	
	0				Percent of Dominant Sp That Are OBL, FACW, o		(A/B)	
Sapling/Shrub Stratum (Plot size: 15ft)							_ ( ' ' - '	
1. Rubus spectabilis	5	<u>Y</u>		<u>FAC</u>	Prevalence Index work			
2					OBL species	Multiply by:		
3. 4.					FACW species			
5.					FAC species			
	5				FACU species			
Herb Stratum (Plot size: 5ft)					UPL species			
Glyceria elata	5			FACW	Column Totals:	(A)	(B)	
2. Juncus effusus				FACW	Provolence Index	= B/A =		
3. Veronica anagallis-aquatica				OBL	Hydrophytic Vegetatio			
4. Ranunculus repens5.					Dominance Test is >			
6.					☐ Prevalence Index is			
7.	· ·				☐ Morphological Adap			
8.						or on a separate she	•	
	37	= To	otal C	over	☐ Problematic Hydropl	hytic Vegetation¹ (Exp	olain)	
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil	and watland budgalac	n, muct	
1. None					be present, unless distu	rbed or problematic.	gy must	
2.	0		otal C	over	Hydrophytic			
					Vegetation			
	er of Biotic C	Crust			Present? Yes	s⊠ No□		
Remarks:								

Depth	cription: (Descri Matri		rebin ne		ox Featu			n uie absen	ce of indicators.)
(inches)	Color (moist)	%	Colo	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-9	10YR 2/1	100	_					Muck	_
9-16	10YR 6/1	50	<u>10YF</u>	R 4/6	50	<u>C</u>	M	Silt	Prominent feature
-					-				
									<del>-</del>
1= 0.0								. 2	
	oncentration, D=Indicators: (App						ted Sand G		Location: PL=Pore Lining, M=Matrix.  ators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol		Jiicabic to		Sandy Redox (		oteu.,			cm Muck (A10)
	oipedon (A2)			Stripped Matrix					d Parent Material (TF2)
☐ Black Hi				oamy Mucky			MLRA 1))	□ Ve	ery Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed	•	2)		☐ Ot	her (Explain in Remarks
	d Below Dark Surf ark Surface (A12)	face (A11)		epleted Matrix Redox Dark Su	` ,	2)			
	Mucky Mineral (S1	)		Depleted Dark	,	,		<sup>3</sup> Indic	ators of hydrophytic vegetation and
	Gleyed Matrix (S4)			Redox Depres					tland hydrology must be present,
								un	less disturbed or problematic.
Restrictive	Layer (if present	:):							
Type:									
Depth (in	ches):							Hydric S	oil Present? Yes ⊠ No □
Remarks:									
HYDROLO									
-	drology Indicato								
	cators (minimum	of one requ	iired; che	• •		(D0)	, , , , , , , , , , , , , , , , , , , ,		condary Indicators (2 or more required)
☐ Surfac	e Water (A1)			☐ Water-St <b>4A, and 4B</b> )		aves (B9)	(except ML		☐ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
_ •	/ater Table (A2)			☐ Salt Cru					Drainage Patterns (B10)
Satura     Sa				☐ Aquatic		, ,			Dry-Season Water Table (C2)
	Marks (B1)			Hydroge		•			☐ Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2) eposits (B3)					oneres alor uced Iron (	ng Living Ro	oots (C3)	☐ Geomorphic Position (D2) ☐ Shallow Aguitard (D3)
	Mat or Crust (B4)			☐ Recent			,	36)	FAC-Neutral Test (D5)
_	eposits (B5)						(D1)( <b>LRR</b> A	,	☐ Raised Ant Mounds (D6( <b>LRR A</b> )
	e Soil Cracks (B6)	)				Remarks)	`		☐Frost-Heave Hummocks (D7)
☐ Inundat	ion Visible on Aer	rial Imagery	(B7)						
	ly Vegetated Cond								
Field Obser	vations:								
Surface Wat	ter Present?	Yes 🗌	No 🛛	Depth (inche	es):				
Water Table	Present?	Yes 🛛	No 🗌	Depth (inche	es): <u>5</u>				
Saturation P		Yes 🛛	No 🗌	Depth (inche	es): <u>0</u>		Wet	land Hydrol	ogy Present? Yes ⊠ No □
	pillary fringe) corded Data (stre	am dauga	monitor	na well porio	Inhotos	nrevious ir	enections)	if available:	
Describe Re	oorded Dala (Sile	am yauye,	monitori	ng wen, aena	ι μποιυδ,	hievions II	15pecti0115),	ıı avallable.	
Remarks:									
Nomains.									

Project/Site: Weyerhaeuser		City/C	ounty: <u>Federa</u>	l Way/King County	Sampli	ing Date: 12/19/2	2015
Applicant/Owner: Federal Way Campus, LLC				State: WA	Sampli	ing Point: <u>CB-U</u>	PL1
Investigator(s): JMM, DRT			Section,	Township, Range: S15	5 T21N R4E		
Landform (hillslope, terrace, etc.): Terrace		Loca	ıl relief (conca	ve, convex, none): Non	e	Slope (%)	): <u>2-5%</u>
Subregion (LRR): <u>LRR-A</u>	_ Lat:			Long:		Datum: NAI	D83
Soil Map Unit Name: Alderwood gravel sandy loam, 0-8% sle	opes			NWI clas	ssification: <u>PS</u>	S	
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Ye	es 🛛 No 🗌	(If no, explain in Rema	arks.)		
Are Vegetation, Soil, or Hydrology sign	-			Normal Circumstances		′es ⊠ No □	
Are Vegetation, Soil, or Hydrology nature				eded, explain any answ	•		
SUMMARY OF FINDINGS – Attach site map s							es. etc.
	<u>g</u>		p9 p	, , , , , , , , , , , , , , , , , , , ,	,p		<u>, c, c.o.</u>
Hydrophytic Vegetation Present? Yes ☐ No ☐ Hydric Soil Present? Yes ☐ No ☐ N			Is the Sampl	ed Area			
Wetland Hydrology Present? Yes ☐ No ☒			within a Wet	land? Yes [	□ No ⊠		
Remarks:							
<b>VEGETATION – Use scientific names of plant</b>	s.						
T 0: (D) ( : 00)	Absolute		inant Indicato		worksheet:		
Tree Stratum (Plot size: 30)			cies? Status	- Number of Domina		0	(4)
Pseudotsuga menziesii     Thuja plicata	<u>40</u>				SVV, OI FAC.	2	(A)
3. Alnus rubra				Total Number of D		4	(B)
4.				'		<del></del>	(D)
	60			Percent of Domina That Are OBL, FA		50	(A/B)
Sapling/Shrub Stratum (Plot size: 15)							(, , , )
1. Acer circinatum	40	<u>Y</u>	FAC			Multiply	
2				-		Multiply by: $1 = 0$	
4.				FACW species 0			
5.			<u> </u>	FAC species 60	-	·	
	40	= Tc	otal Cover	FACU species 90		<u>-</u>	
Herb Stratum (Plot size: <u>5</u> )				UPL species 0	x	( 5 = <u>0</u>	<u>—</u>
1. Polystichum munitum	50	<u>Y</u>	<u>FACU</u>	- Column Totals: 15	50 (A	A) <u>540</u>	(B)
2		-		- Prevalence I	ndex = B/A =	. 36	
3. 4.				Hydrophytic Vege			
5.				□ Dominance Te			
6.			<u> </u>	□ Prevalence Inc	dex is ≤3.0¹		
7.						(Provide suppor	
8.						separate sheet)	•
	50	= To	otal Cover	☐ Problematic H	ydrophytic Ve	getation (Expla	ıın)
Woody Vine Stratum (Plot size: 30)				<sup>1</sup> Indicators of hydri	ic soil and wa	tland hydrology	must
1				be present, unless	disturbed or	problematic.	must
Z	0	- To	otal Cover	Hydrophytic			
0. B 0 1. H 1. C 1. T				Vegetation	Vec 🗆	ı <b>.</b> M	
% Bare Ground in Herb Stratum 50 % Cove	er of Biotic C	_rust		Present?	Yes □ N	lo 🛛	
remars.							

			lepth ne				or confirn	n the absen	ce of indicators.)	
Depth (inches)	Matrix Color (moist)	_ %	Colo	r (moist)	ox Feature		Loc <sup>2</sup>	Texture	Remarks	_
0-2	10YR 4-2	100						Silt loam		
2-16	7.5YR 4/4	100						Silt loam		_
	7.011( 1/1					-		OII IOGIII		_
									<del>-</del>	_
										_
								-		_
	-									_
										_
									_	_
	oncentration, D=D						ed Sand G	rains. <sup>2</sup>	Location: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators: (App	licable to	all LRR	s, unless othe	erwise not	ed.)		Indic	ators for Problematic Hydric Soils <sup>3</sup> :	
Histosol	· ,			Sandy Redox (					cm Muck (A10)	
	oipedon (A2)		_	Stripped Matrix	` '	(aveant	MI DA 4\\		ed Parent Material (TF2)	
_	n Sulfide (A4)			oamy Mucky oamy Gleyed			WILKA 1))		ery Shallow Dark Surface (TF12) ther (Explain in Remarks	
	l Below Dark Surfa	ace (A11)		epleted Matrix	. ,				mer (Explain in Kemarks	
	rk Surface (A12)			Redox Dark Su	` '					
	lucky Mineral (S1)			Depleted Dark	Surface (F	7)		<sup>3</sup> Indic	cators of hydrophytic vegetation and	
☐ Sandy G	leyed Matrix (S4)		☐ F	Redox Depress	sions (F8)				etland hydrology must be present,	
								un	nless disturbed or problematic.	
	Layer (if present)									
								l		
	ches):		_					Hydric S	ioil Present? Yes ☐ No ☒	
Remarks:										
HYDROLO	GY									
•	drology Indicator									
Primary Indi	cators (minimum o	f one requ	ired; che		• •				condary Indicators (2 or more required)	
☐ Surface	e Water (A1)			☐ Water-St <b>4A, and 4B</b> )	)	res (B9) (e	except ML		Water Stained Leaves (B9) (MLRA 4A, and 4B))	, 2,
_ •	ater Table (A2)			☐ Salt Cru	` ,				Drainage Patterns (B10)	
l	ion (A3)			☐ Aquatic					☐ Dry-Season Water Table (C2)	
☐ Water	` ,			Hydroge		` '		. (00)	Saturation Visible on Aerial Imagery	(C9)
	ent Deposits (B2)				d Rhizosph		-	oots (C3)	Geomorphic Position (D2)	
	eposits (B3) lat or Crust (B4)			☐ Presence	ron Reduct			`c\	☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5)	
_	eposits (B5)			_	or Stresse		,	,	Raised Ant Mounds (D6(LRR A)	
	e Soil Cracks (B6)				xplain in R		DI)(LIKIK A		Frost-Heave Hummocks (D7)	
	ion Visible on Aeri	al Imagen	(R7)							
	y Vegetated Conc									
Field Obser			)C (DO)							
Surface Wat		Yes □	No ⊠	Depth (inche	·e).					
Water Table			No ⊠	Depth (inche						
Saturation P			No ⊠	Depth (inche			Wetl	land Hydrol	logy Present? Yes ☐ No ⊠	
(includes ca	oillary fringe)									
Describe Re	corded Data (strea	am gauge,	monitor	ng well, aerial	photos, pr	evious ins	spections),	if available:		
Remarks: No	oindicators									

Project/Site: Weyerhaeuser	City/County: Federal Way/King County							
Applicant/Owner: Federal Way Campus, LLC	Owner: Federal Way Campus, LLC							
Investigator(s): JMM, DRT			Section, T	ownship, Range: <u>S15 T2</u>	1N R4E			
Landform (hillslope, terrace, etc.): Hillslope		Local	relief (concave	e, convex, none): None	Slope (%): <u>0-3</u>			
Subregion (LRR): <u>LRR-A</u>	Datum: NAD83							
Soil Map Unit Name: Alderwood gravel sandy loam, 0-8% sl	opes			NWI classific	cation: PFO			
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sign	-			lormal Circumstances" pr				
Are Vegetation, Soil, or Hydrology natu				ded, explain any answers				
SUMMARY OF FINDINGS – Attach site map								
	<u> </u>		<u> </u>	,	<u>,                                     </u>			
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Is the Sampled Area  Hydric Soil Present? Yes ⊠ No ☐ Use the Sampled Area								
Wetland Hydrology Present? Yes ⊠ No □		v	vithin a Wetla	ınd? Yes ⊠	No 🗌			
Remarks:								
<b>VEGETATION – Use scientific names of plant</b>	ts.							
Total Ottal var. (Plat sizes 00)	Absolute		ant Indicator	Dominance Test wor	ksheet:			
Tree Stratum (Plot size: 30)  1. Alnus rubra			es? Status FAC	Number of Dominant S	Species or FAC: <u>2</u> (A)			
2. Fraxinius latifolia				That Are OBL, FACW,	01 FAC. <u>2</u> (A)			
3				Total Number of Domi Species Across All Str				
4.								
	55			Percent of Dominant S That Are OBL, FACW.	Species or FAC: <u>100</u> (A/B)			
Sapling/Shrub Stratum (Plot size: 15)								
1. None				Prevalence Index wo				
2.					Multiply by: x 1 = 0			
3. 4.								
5.					x = 0 $x = 0$			
<u> </u>	0				x = 4 = 0			
Herb Stratum (Plot size: 5)	<u></u>				x 5 = <u>0</u>			
1. None				Column Totals: 0	(A) <u>0</u> (B)			
2.				Prevalence Inde	ν – P/Λ – O			
3.		-		Hydrophytic Vegetati				
4				Dominance Test is				
6.				☐ Prevalence Index				
7.					aptations <sup>1</sup> (Provide supporting			
8.		_			ks or on a separate sheet)			
	0	= Tota	al Cover	☐ Problematic Hydro	ophytic Vegetation¹ (Explain)			
Woody Vine Stratum (Plot size: <u>30</u> )				The Parties of building	. The second consistency of the second consi			
1. None				be present, unless dis	oil and wetland hydrology must turbed or problematic.			
2.		_ Total	ol Cover	Hydrophytic				
	0			Vegetation				
	er of Biotic (	Crust		Present? Yo	es 🛛 No 🗌			
Remarks:								

Profile Des	cription: (Descri	be to the d	epth ne	eded to docur	nent the i	ndicator	or confirm	n the abs	sence of indicators.)
Depth	Matrix				x Feature				
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e Remarks
	•								
-									<del></del>
								-	
					<b>.</b>				
1= 0.0								-	21 DI D. III M.M.
	Concentration, D=D Indicators: (App						ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.  dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol		ilicable to		Sandy Redox (S		eu.,			2 cm Muck (A10)
	oipedon (A2)			Stripped Matrix					Red Parent Material (TF2)
☐ Black Hi				Loamy Mucky M	. ,	(except	MLRA 1))		Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			oamy Gleyed M		(	,,		Other (Explain in Remarks
	d Below Dark Surf	ace (A11)		Depleted Matrix					<b>,</b> ,
☐ Thick Da	ark Surface (A12)			Redox Dark Sur	face (F6)				
	Mucky Mineral (S1)	1		Depleted Dark S	•	7)			dicators of hydrophytic vegetation and
☐ Sandy G	Bleyed Matrix (S4)			Redox Depressi	ons (F8)				wetland hydrology must be present,
									unless disturbed or problematic.
Restrictive	Layer (if present)	):							
· · ·			_						
Depth (in	-		_						c Soil Present? Yes ⊠ No □ t were identified were a 2/1 sandy loam but
could not di	g very deep. Assur	ned hydric	from sti	rong hydrologic	indicators				
<b>HYDROLO</b>	)GY								
Wetland Hy	drology Indicato	rs:							
Primary Indi	cators (minimum o	of one requi	red; che	eck all that appl	y)				Secondary Indicators (2 or more required)
⊠ Surfac	e Water (A1)			☐ Water-Sta	ined Leav	res (B9) (e	except ML	.RA 1, 2,	
☐ High W	Vater Table (A2)			☐ Salt Crus	t (B11)				☑ Drainage Patterns (B10)
	tion (A3)			☐ Aquatic Ir	nvertebrat	es (B13)			☐ Dry-Season Water Table (C2)
☐ Water	Marks (B1)			☐ Hydroger	Sulfide C	dor (C1)			☐ Saturation Visible on Aerial Imagery (C9)
☐ Sedim	ent Deposits (B2)			Oxidized	Rhizosph	eres alon	g Living Ro	oots (C3)	□ Geomorphic Position (D2)
□ Drift Deligation     □ Drift Delig	eposits (B3)			☐ Presence	of Reduc	ed Iron (C	C4)		☐ Shallow Aquitard (D3)
☐ Algal Mat or Crust (B4) ☐ Recent Iron Reduction in Tilled So						ed Soils (C	26)	☐ FAC-Neutral Test (D5)	
☐ Iron Deposits (B5) ☐ Stunted or Stressed Plants (D1)(LRF						D1)( <b>LRR</b> A	A)	☐ Raised Ant Mounds (D6( <b>LRR A</b> )	
☐ Surfac	e Soil Cracks (B6)			Other (Ex	plain in R	emarks)			☐Frost-Heave Hummocks (D7)
☐ Inundat	tion Visible on Aer	ial Imagery	(B7)						
☐ Sparse	ly Vegetated Cond	ave Surfac	e (B8)						
Field Obser	rvations:								
Surface Wat	ter Present?	Yes 🛛	No 🗌	Depth (inches	s): <u>4-6</u>				
Water Table	Present?	Yes 🗌	No 🛛	Depth (inches	s):				
	pillary fringe)		No 🗌	Depth (inches				-	rology Present? Yes 🛛 No 🗌
Describe Re	ecorded Data (stre	am gauge,	monitor	ing well, aerial	ohotos, pr	evious ins	spections),	if availab	ele:
Remarks: B	raided channels								

Project/Site: Weyerhaeuser	(	City/Co	ounty: <u>Federal V</u>	Vay/King County	Sampling Date: 12/19/2015		
Applicant/Owner: Federal Way Campus, LLC		State: WA	_ Sampling Point: CD-UPL1				
Investigator(s): JMM, DRT			Section, To	ownship, Range: <u>S15 T21I</u>	N R4E		
Landform (hillslope, terrace, etc.): Slope		Local	I relief (concave	, convex, none): non	Slope (%): <u>2-5%</u>		
Subregion (LRR): <u>LRR-A</u>	_ Lat: 47.3°	10362		Long: -122.288643	Datum: NAD83		
Soil Map Unit Name: Alderwood gravel sandy loam, 0-8% sl	opes			NWI classifica	ation: PFO/PSS		
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	es 🛛 No 🗌 (I	If no, explain in Remarks.)			
Are Vegetation, Soil, or Hydrology sign	-			ormal Circumstances" pre			
Are Vegetation, Soil, or Hydrology natu				led, explain any answers ir	n Remarks.)		
SUMMARY OF FINDINGS – Attach site map							
	<u>g</u>		pg perior	,	, <b>p</b>		
Hydrophytic Vegetation Present? Yes ☐ No ☐ Hydric Soil Present? Yes ☐ No ☐ Yes ☐ No ☐ N			Is the Sampled	d Area			
Wetland Hydrology Present? Yes ☐ No ☒		,	within a Wetla	nd? Yes □ N	lo 🛚		
Remarks:							
<b>VEGETATION – Use scientific names of plan</b>	s.						
T. O. (DI.) (20)			nant Indicator	Dominance Test work	sheet:		
Tree Stratum (Plot size: <u>30</u> )			cies? Status	Number of Dominant Sp That Are OBL, FACW, of	pecies or FAC: 1 (A)		
Pseudotsuga menziesii     Thuja plicata				That Are OBL, FACW, C	) FAC. <u>1</u> (A)		
3				Total Number of Domina Species Across All Stra			
4.							
	65			Percent of Dominant Sp That Are OBL, FACW, of	pecies or FAC: <u>25</u> (A/B)		
Sapling/Shrub Stratum (Plot size: 15)							
1. Gaultheria shallon				Prevalence Index worl			
2. Thuja plicata			<u>FAC</u>		Multiply by: x 1 = 0		
Ilex aquifolium      Arbutus menziesii					x = 0 x = 0		
5				· · · · · · · · · · · · · · · · · · ·	$x = \frac{3}{5}$		
<u> </u>	92				x 4 = <u>532</u>		
Herb Stratum (Plot size: 5)				UPL species 0	x 5 = <u>0</u>		
1. None				Column Totals: 158	(A) <u>607</u> (B)		
2.				Prevalence Index	_ D/Λ _ 2 04		
3.				Hydrophytic Vegetation			
4				Dominance Test is:			
6.				☐ Prevalence Index is			
7.					otations <sup>1</sup> (Provide supporting		
8.					s or on a separate sheet)		
	0	= To	tal Cover	☐ Problematic Hydrop	ohytic Vegetation <sup>1</sup> (Explain)		
Woody Vine Stratum (Plot size: <u>30</u> )				1 Indicators of hydric coil	I and wetland hydrology must		
1. Rubus armeniacus	2	<u>Y</u>	<u>FACU</u>	be present, unless distu	irbed or problematic.		
2.		_ To:	tal Cover	Hydrophytic			
	2			Vegetation			
	er of Biotic C	Crust _		Present? Yes	s 🗌 No 🛚		
Remarks: Mountain beaver burrows present							

	cription: (Descri		lepth need				or confirn	n the absen	ce of indicato	rs.)		
Depth (inches)	Matrix Color (moist)	<u>(</u> %	Color (ı		ox Feature %		Loc <sup>2</sup>	Texture		Remarks		
0-2	10YR 2/1	100	<u> </u>					Silt loam			_	
2-8	7.5YR 4/4	100						Silt loam				
8-10	10YR 2/1	100						Silt loam				
<u>10-16+</u>	7.5YR 4/6	100	_					Silt loam				
	-							-				
			_									
			_									
	oncentration, D=D						ed Sand Gr		ocation: PL=			
_	Indicators: (App	licable to				ed.)			ators for Prob	•	dric Soils <sup>3</sup> :	
☐ Histosol	` '			ndy Redox (					cm Muck (A10	,		
☐ Histic Ep	oipedon (A2)			ipped Matrix amy Mucky	` '	(avaant	MI DA 1\\		d Parent Mate ery Shallow Da	, ,	(TE12)	
_	en Sulfide (A4)			my Gleyed			WILKA I))		her (Explain in		(1712)	
	d Below Dark Surf	ace (A11)		oleted Matrix					nei (Explain in	Itemarks		
	ark Surface (A12)	400 (7111)		dox Dark Su	. ,							
	Mucky Mineral (S1)			pleted Dark	, ,	7)		<sup>3</sup> Indic	ators of hydror	hytic vege	tation and	
☐ Sandy G	Gleyed Matrix (S4)		☐ Red	dox Depres	sions (F8)			we	tland hydrolog	y must be	present,	
								un	ess disturbed	or problem	atic.	
Restrictive	Layer (if present)											
Type:			_									
Depth (in	ches):							Hydric S	oil Present?	Yes 🗌	No ⊠	
Remarks:												
HYDROLO	GY											
Wetland Hy	drology Indicato	rs:										
Primary Indi	cators (minimum o	of one requ	ired; check	all that app	oly)			Sec	condary Indica	tors (2 or n	nore required)	
☐ Surfac	e Water (A1)		[	☐ Water-St	tained Leav	es (B9) (	except ML	RA 1, 2,	☐ Water Stai	ned Leave	s (B9) ( <b>MLRA 1, 2,</b>	
				4A, and 4B	,				4A, and 4B))			
	/ater Table (A2)		_	Salt Cru	` ,	<b></b>			Drainage F	`	,	
l	☐ Saturation (A3) ☐ Aquatic Invertebrates (B13)							☐ Dry-Season Water Table (C2)				
	☐ Water Marks (B1) ☐ Hydrogen Sulfide Odor (C1)						5	Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2)				
☐ Sediment Deposits (B2) ☐ Oxidized Rhizospheres along Living R							oots (C3)					
□ Drift Deposits (B3) □ Presence of Reduced Iron (C4)							·c)	Shallow A				
_	☐ Algal Mat or Crust (B4) ☐ Recent Iron Reduction in Tilled Soils (☐ Iron Deposits (B5) ☐ Stunted or Stressed Plants (D1)(LRR						,					
	e Soil Cracks (B6)				Explain in R	•	)( <b>LIXIX</b> A	•	☐ Raised An			
	ion Visible on Aer		, (B7)		-xpiaiii iii i	ornanto)				7 1 10111111001	(0 (D1)	
	ly Vegetated Cond											
Field Obser		ave Suriac	ъе (во)									
Surface Wat		Yes 🗌	No 🛛 🛚 🗈	Depth (inche	oc).							
Water Table												
Saturation P				Depth (inche			Wot	and Hudral	ogy Present?	Voc 🗆	No 🏻	
	pillary fringe)	Yes 🗌	No 🛛 🛚 🖸	Depth (inche	:5)		well	and Hydron	ogy Fresent?	ies 🗆	No ⊠	
	corded Data (stre	am gauge,	monitoring	y well, aeria	l photos, pr	evious ins	pections),	if available:				
Remarks:												

Project/Site: Weyerhaeuser		City/C	ounty	r: <u>Federal W</u>	/ay/King County	Sampling Date	e: <u>12/19/20</u>	15
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Poir	nt: <u>CD-WE</u>	T1
Investigator(s): JMM, DRT				Section, To	wnship, Range: <u>S15 T21</u>	N R4E		
Landform (hillslope, terrace, etc.): Depression		Loca	al relie	f (concave,	convex, none): None	S	lope (%): <u>(</u>	0-2%
Subregion (LRR): <u>LRR-A</u>	_ Lat: <u>47.3</u>	10326	6		Long: -122.288310	Dat	ium: <u>NAD8</u>	33
Soil Map Unit Name: Alderwood gravel sandy loam, 0-8% sl	opes				NWI classifica	ation: PFO/PSS		
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	es 🛛	No ☐ (If	f no, explain in Remarks.)			
Are Vegetation No, Soil No, or Hydrology No significantly di	sturbed?	A	re "N	ormal Circu	ımstances" present? Yes	s 🛛 No 🗌		
Are Vegetation No, Soil No, or Hydrology No naturally proble	ematic?	(I	f need	ded, explain	any answers in Remarks	s.)		
SUMMARY OF FINDINGS - Attach site map	showing	sam	pling	g point lo	ocations, transects,	, important f	eatures	, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □								
Hydric Soil Present? Yes ⊠ No □				e Sampled in a Wetlan		ЬП		
Wetland Hydrology Present? Yes ⊠ No □			WILIII	iii a vveiiaii	iu! fes 🖂 N	10 🔲		
Remarks:								
VECETATION . Her exicutific names of plant								
VEGETATION – Use scientific names of plant	Absolute	Dom	inant	Indicator	Dominance Test works	shoot:		
Tree Stratum (Plot size: 30)	% Cover				Number of Dominant Sp			
Pseudotsuga menziesii	10	<u>Y</u>		FACU	That Are OBL, FACW, o	or FAC: 2	(	(A)
2.					Total Number of Domina	ant		
3.					Species Across All Strat	ta: <u>3</u>	(I	(B)
4					Percent of Dominant Sp			
Sapling/Shrub Stratum (Plot size: 15)	10	= 10	otal Co	over	That Are OBL, FACW, o	or FAC: <u>67</u>	(/	A/B)
1. Alnus rubra	60	Y		FAC	Prevalence Index work	ksheet:		
2. Rubus spectabilis	40	<u>Y</u>		FAC	Total % Cover of:	Multi	ply by:	_
3.						x 1 = <u>0</u>		
4.					FACW species 0			
5					FAC species 0  FACU species 0	x 3 = 0		_
Herb Stratum (Plot size: 5)	100	= 10	otal C	over	UPL species 0			
1. None					Column Totals: 0			
2.								,
3					Prevalence Index			
4.					Hydrophytic Vegetatio  Dominance Test is			
5					☐ Prevalence Index is			
6					☐ Morphological Adap		e supportir	na
8.					data in Remarks			3
	0	= To	otal C	over	☐ Problematic Hydrop	hytic Vegetation	า <sup>1</sup> (Explain)	)
Woody Vine Stratum (Plot size: <u>30</u> )					1			
1. None					<sup>1</sup> Indicators of hydric soil be present, unless distu	and wetland ny Irbed or problem	rarology mi natic.	ust
2.			otal C		Hydrophytic			
	0				Vegetation	<b>-</b>		
	er of Biotic (	Crust			Present? Yes	s 🛛 No 🗌		
Remarks: Mountain beaver burrows inside feature								

Depth	Matrix		espui ile		dox Feature			abse	nce of indicators.)
(inches)	Color (moist)	%	Colo	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-16	10YR 2/1	100						Silt loam	
									<del></del>
									<u> </u>
1Type: C=C	oncentration, D=D	enletion F	- PM-Red	uced Matrix	CS-Covered	d or Coate	ad Sand G	raine	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
	Indicators: (Appl						ou Sanu O		cators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol				Sandy Redox		,			2 cm Muck (A10)
	pipedon (A2)			Stripped Mati					Red Parent Material (TF2)
☐ Black Hi	stic (A3)		□ I	oamy Muck	y Mineral (F1	(except	MLRA 1))	□ \	Very Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed					Other (Explain in Remarks
•	d Below Dark Surfa	ace (A11)		epleted Mati	` ,				
	ark Surface (A12)			Redox Dark S	, ,	7\		31	
-	lucky Mineral (S1) Bleyed Matrix (S4)			Depleted Dar Redox Depre	•	7)			icators of hydrophytic vegetation and vetland hydrology must be present,
☐ Sandy C	neyed Matrix (04)		·	redux Depie	3310113 (1 0)				Inless disturbed or problematic.
Restrictive	Layer (if present)	<u> </u>							
	ches):							Hydric	Soil Present? Yes ⊠ No □
	ydric indicators ass			nic indicators	are etrong			11,500.10	
HYDROLO	GY								
Wetland Hy	drology Indicator	s:							
Primary Indi	cators (minimum o	f one requ	ired; che	eck all that ap	oply)			S	econdary Indicators (2 or more required)
Surface     Surface	e Water (A1)			<ul><li>☐ Water-\$</li><li>4A, and 4I</li></ul>	Stained Leav <b>B</b> )	es (B9) (	except ML	.RA 1, 2,	<ul><li></li></ul>
	/ater Table (A2)			☐ Salt Cı	rust (B11)				☐ Drainage Patterns (B10)
Satura	tion (A3)			☐ Aquati	c Invertebrat	es (B13)			☐ Dry-Season Water Table (C2)
	Marks (B1)				gen Sulfide C	, ,			Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)				ed Rhizosph		-	oots (C3)	Geomorphic Position (D2)
	eposits (B3)				nce of Reduc	,	•		Shallow Aquitard (D3)
•	Mat or Crust (B4)				t Iron Reduc		`	,	FAC-Neutral Test (D5)
	eposits (B5)				d or Stresse		D1)( <b>LRR A</b>	<b>A</b> )	Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)		(= -\		(Explain in R	emarks)			☐Frost-Heave Hummocks (D7)
	ion Visible on Aeri								
	y Vegetated Conc	ave Surfac	e (B8)						
Field Obser	vations:								
Surface Wat	er Present?	Yes ⊠	No 🗌	Depth (inch	nes): <u>1-2</u>				
Water Table	Present?	Yes 🛚	No 🗌	Depth (inch	nes): <u>2</u>				
Saturation P		Yes 🛚	No 🗌	Depth (inch	nes): <u>1</u>		Wet	land Hydro	ology Present? Yes ⊠ No □
	pillary fringe) corded Data (strea	ım gauge	monitor	ing well, aeri	al photos, pr	evious in	spections)	if available	e:
20001100 110		34490,			p	J J J I I			
Remarks:									
Action No.									

Project/Site: TAL-1572	(	City/C	County: <u>Fed</u>	deral Wa	ay/King County	Sampling	Date: <u>12/19/2</u>	:015
Applicant/Owner: IRG/Weyerhauser					State: WA	Sampling	Point: <u>CE-UF</u>	PL1
Investigator(s): <u>JMM</u> , <u>DRT</u>			Sect	tion, Tov	vnship, Range: <u>S15 T2</u>	1N R4E		
Landform (hillslope, terrace, etc.): Hillslope		Loca	al relief (co	oncave, o	convex, none): None		_ Slope (%)	: <u>5+%</u>
Subregion (LRR): <u>LRR-A</u>								
Soil Map Unit Name: <u>Alderwood gravel sandy loam, 0-8% sl</u>					_			
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sign	-				mal Circumstances" pr		⊠ No □	
Are Vegetation, Soil, or Hydrology natu	-				d, explain any answers			
SUMMARY OF FINDINGS – Attach site map								s oto
	Silowing	Saiii	ping pe	OIIIL IO	cations, transect	s, illiporta	iit icature	3, 610.
Hydrophytic Vegetation Present? Yes ☐ No ☒			Is the Sa	ampled A	Area			
Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒			within a \	Wetland	I? Yes □	No ⊠		
Remarks:								
<b>VEGETATION – Use scientific names of plant</b>	s.							
Tron Stratum (Plot gize: 20)			inant Indi		Dominance Test wor	ksheet:		
Tree Stratum (Plot size: 30)  1. Pseudotsuga menziesii	% Cover				Number of Dominant S That Are OBL, FACW			(Δ)
2. Thuja plicata								(八)
3					Total Number of Domi Species Across All Str			(B)
4.								(-)
			otal Cover		Percent of Dominant S That Are OBL, FACW		5	(A/B)
Sapling/Shrub Stratum (Plot size: <u>15</u> )		.,		<u></u>				
1. Gaultheria shallon					Prevalence Index wo  Total % Cover of:		Aultiply by:	
Pseudotsuga menziesii     Mahonia aquifolium					OBL species 0			
4. Ilex aquifolium					FACW species 0			
5.					FAC species 10		·	_
		= To	otal Cover		FACU species 132	x 4 =	= <u>528</u>	_
Herb Stratum (Plot size: 5)					UPL species 0		= 0	_
1. Polystichum munitum	10	<u>Y</u>	<u>FAC</u>	CU_	Column Totals: 142	(A)	<u>558</u>	_ (B)
2			<del></del>		Prevalence Inde	ex = B/A = 3.5	93	
4.					Hydrophytic Vegetat			
5.			<del></del>		☐ Dominance Test is			
6.					☐ Prevalence Index	is ≤3.0¹		
7.					☐ Morphological Ada			
8.					data in Remark			
Manda Vine Otestano (Plateine 00)	10	= To	otal Cover		☐ Problematic Hydro	priylic vegeta	alion (Explai	11)
Woody Vine Stratum (Plot size: 30) 1.					<sup>1</sup> Indicators of hydric so	oil and wetlan	d hydrology i	must
1					be present, unless dis			
	0	= To	otal Cover		Hydrophytic			
9/ Rara Ground in Harb Stratum					Vegetation Present? Yes	es □ No ⊠	<b>a</b>	
% Bare Ground in Herb Stratum % Cover Remarks:	er of Biotic C	Just _						

Profile Des	cription: (Describ	e to the d	epth ne	eded to docu	ment the	indicator	or confirn	n the abse	nce of indicators.)
Depth	Matrix		_	Redo	ox Feature	s			
(inches)	Color (moist)	%	Color	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-3	10YR 4/2	100	_						
3-18	7.5 YR 4/4	100						Sand	
	-		_			<del></del>			
					_				
		_	_						
					_			-	
	oncentration, D=D						ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
_	Indicators: (Appl	icable to				ed.)			cators for Problematic Hydric Soils <sup>3</sup> :
Histosol	, ,			Sandy Redox (					2 cm Muck (A10)
	oipedon (A2)			Stripped Matrix	, ,	. ,			Red Parent Material (TF2)
☐ Black Hi				oamy Mucky I			MLRA 1))		Very Shallow Dark Surface (TF12)
	en Sulfide (A4)	00 (111)		oamy Gleyed I					Other (Explain in Remarks
	d Below Dark Surfa ark Surface (A12)	ce (ATT)		epleted Matrix Redox Dark Su					
	Mucky Mineral (S1)			Depleted Dark	, ,	·7)		<sup>3</sup> Indi	cators of hydrophytic vegetation and
_	Gleyed Matrix (S4)			Redox Depress	•	')			retland hydrology must be present,
	,			.одож 2 ор. оос	(. 0)				nless disturbed or problematic.
Restrictive	Layer (if present):								·
Type:									
, , <u> </u>	iches):							Hydric	Soil Present? Yes ☐ No ⊠
								Tiyunc	Our resent: res No Z
Remarks:									
HYDROLO	GY								
Wetland Hy	drology Indicator	s·							
_	cators (minimum o		rad: cha	ock all that ann	Jv)			S	econdary Indicators (2 or more required)
	e Water (A1)	One requi	ica, cric	□ Water-St		(OC (BQ) (	ovcont MI		Water Stained Leaves (B9) (MLRA 1, 2,
│	e water (AT)			4A, and 4B)		ves (Da) (	except wit	.NA 1, 2,	4A, and 4B))
☐ Hiah W	/ater Table (A2)			☐ Salt Crus	st (B11)				☐ Drainage Patterns (B10)
	tion (A3)				Invertebrat	tes (B13)			☐ Dry-Season Water Table (C2)
	Marks (B1)				n Sulfide (				☐ Saturation Visible on Aerial Imagery (C9)
☐ Sedime	ent Deposits (B2)						g Living Ro	oots (C3)	Geomorphic Position (D2)
	eposits (B3)				e of Reduc			` ,	☐ Shallow Aquitard (D3)
	Mat or Crust (B4)						ed Soils (C	26)	FAC-Neutral Test (D5)
	eposits (B5)						D1)( <b>LRR A</b>		Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)				xplain in R		, ,	,	☐Frost-Heave Hummocks (D7)
	tion Visible on Aeria	al Imagery	(B7)	_	•	,			_
	ly Vegetated Conc								
Field Obser		ave Suriac	e (D0)						
		V □	N - 🔽	Danth (in the	-\-				
Surface Wat			No ⊠	Depth (inche					
Water Table			No 🛛	Depth (inche					
Saturation P	resent? pillary fringe)	Yes 🗌	No 🛛	Depth (inche	s):		Wetl	land Hydro	ology Present? Yes ☐ No ☒
	ecorded Data (strea	m gauge.	monitori	ng well, aerial	photos, pr	evious ins	spections).	if available	):
	(	5 5-,		J ,	, -,		//		
Remarks:									

Project/Site: TAL-1572		City/C	ounty:	: <u>Federal W</u>	Vay/King County	Sampling Date: 12/19/2015
Applicant/Owner: IRG/Weyerhauser					State: WA	Sampling Point: CE-WET1
Investigator(s): JMM, DRT			;	Section, To	ownship, Range:	
Landform (hillslope, terrace, etc.): Depressional		Loca	al relief	(concave,	convex, none): Concave	Slope (%): <u>1-3%</u>
Subregion (LRR): <u>LRR-A</u>	Lat: 47.3	10580	)		Long: -122.289874	Datum: NAD83
Soil Map Unit Name: Alderwood gravel sandy loam, 0-8% sl	opes				NWI classification	ation: PEM
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Ye	es 🛛	No ☐ (If	f no, explain in Remarks.)	)
Are Vegetation, Soil, or Hydrology sign	ificantly dis	turbed	d?	Are "No	ormal Circumstances" pre	sent? Yes ⊠ No □
Are Vegetation, Soil, or Hydrology natu				(If neede	ed, explain any answers i	n Remarks.)
SUMMARY OF FINDINGS - Attach site map				g point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □	_					
Hydric Soil Present? Yes ⊠ No □				Sampled		. 🗖
Wetland Hydrology Present? Yes ⊠ No □			withi	n a Wetlan	nd? Yes⊠ N	10 🗌
Remarks:						
<b>VEGETATION – Use scientific names of plant</b>	ts.					
Tree Stratum (Plot size: 30)	Absolute % Cover			Indicator	Dominance Test work	
1					Number of Dominant S That Are OBL, FACW,	
2.						
3.					Total Number of Domin Species Across All Stra	
4.					Percent of Dominant S	
	0	= To	otal Co	over		or FAC: <u>100</u> (A/B)
Sapling/Shrub Stratum (Plot size: 15)					Prevalence Index wor	kshoot
1						Multiply by:
3.						x 1 = 0
4.				<u> </u>		x 2 = 0
5.					FAC species 0	x 3 = <u>0</u>
	0	= To	otal Co	over	FACU species 0	x 4 = <u>0</u>
Herb Stratum (Plot size: 5)	00			E A O \ A / *		x 5 = <u>0</u>
Carexsp.      Ranunculus repens	30 25			FACW* FAC	Column Totals: 0	(A) <u>0</u> (B)
3. Urtica dioica				FAC	Prevalence Index	A = B/A = 0
4.					Hydrophytic Vegetation	on Indicators:
5.					□ Dominance Test is	>50%
6					☐ Prevalence Index is	s ≤3.0¹
7.						otations <sup>1</sup> (Provide supporting s or on a separate sheet)
8.						phytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 30)	70	= To	otal Co	over		, r og otation (Explain)
1(1 tot 3/26. 36)					<sup>1</sup> Indicators of hydric soi	il and wetland hydrology must
2.					be present, unless distu	urbed or problematic.
	0	= Tc	otal Co	over	Hydrophytic	
% Bare Ground in Herb Stratum % Cove	er of Biotic C	Cruet			Vegetation Present? Ye	s⊠ No □
Remarks: Carex sp. assumed FAC or wetter, unable to ID		Jiual _				
	-1					

Depth	cription: (Descril Matrix	(			Redo	x Feature	es			
(inches)	Color (moist)	%	Colo	r (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-13	10YR 2/1	100							Sandy loam	Cannot dig deeper than 13 inches
								-		
	-									
	-									
	<del></del>									
<sup>1</sup> Type: C=C	concentration, D=D	epletion.	RM=Red	uced Matr	ix. CS	=Covere	ed or Coat	ed Sand G	rains. <sup>2</sup> L	ocation: PL=Pore Lining, M=Matrix.
	Indicators: (App									tors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	(A1)			Sandy Red	dox (S	5)			□ 20	cm Muck (A10)
	oipedon (A2)			Stripped M		. ,				d Parent Material (TF2)
☐ Black Hi					-			MLRA 1))		ry Shallow Dark Surface (TF12)
	en Sulfide (A4)	(0.4.4)		oamy Gle			)		∐ Oth	ner (Explain in Remarks
	d Below Dark Surfa ark Surface (A12)	ace (A11)		epleted M Redox Dai						
	Mucky Mineral (S1)			Depleted [		,			3Indica	ators of hydrophytic vegetation and
	Gleyed Matrix (S4)			Redox Der			',			tland hydrology must be present,
, -	(- ,		_			( -)				ess disturbed or problematic.
Restrictive	Layer (if present)	:								
Type:										
Depth (in	nches):								Hydric So	oil Present? Yes ⊠ No □
Remarks: H	ydric indicators as:	sumed ba	sed on o	ther indica	ators.					
Wetland Hy	drology Indicator									
Wetland Hy Primary Indi	rdrology Indicator cators (minimum c		uired; che							condary Indicators (2 or more required)
Wetland Hy Primary Indi	drology Indicator		uired; che		er-Sta		ves (B9)	except ML	.RA 1, 2,	condary Indicators (2 or more required)
Wetland Hy Primary Indi  ☑ Surfac  ☐ High W	rdrology Indicator cators (minimum c e Water (A1) Vater Table (A2)		uired; che	☐ Wate <b>4A</b> , <b>and</b> ☐ Salt	er-Sta I <b>4B</b> ) Crust	ined Lea	` ,	•	.RA 1, 2, [	Water Stained Leaves (B9) (MLRA 1, 2, IA, and 4B))  Drainage Patterns (B10)
Wetland Hy Primary Indi  Surfac  ☐ High W ☐ Satura	rdrology Indicator cators (minimum c e Water (A1) Vater Table (A2) tion (A3)		uired; che	☐ Wate  4A, and  ☐ Salt  ☐ Aqu	er-Sta I <b>4B</b> ) Crust atic Ir	ined Lea t (B11) overtebra	tes (B13)	•	.RA 1, 2, [	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))  Drainage Patterns (B10)  Dry-Season Water Table (C2)
Wetland Hy Primary Indi  Surface  ☐ High W ☐ Satura ☐ Water	rdrology Indicator cators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1)		uired; che	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd	er-Sta I <b>4B</b> ) Crust atic Ir	ined Lea t (B11) nvertebra Sulfide	ites (B13) Odor (C1)		.RA 1, 2, [	Water Stained Leaves (B9) (MLRA 1, 2, IA, and 4B))  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi  Surface  ☐ High W ☐ Satura ☐ Water ☐ Sedime	rdrology Indicator cators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		uired; che	Wate 4A, and Salt Aqu Hyd	er-Sta I 4B) Crust atic Ir rogen dized	ined Lea t (B11) nvertebra Sulfide Rhizospl	ites (B13) Odor (C1) neres alor	ng Living Ro	.RA 1, 2, [	Water Stained Leaves (B9) (MLRA 1, 2, IA, and 4B))  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C9)  Geomorphic Position (D2)
Wetland Hy Primary Indi  Surface  ☐ High W ☐ Satura ☐ Water ☐ Sedime	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)		uired; che	Wate 4A, and Salt Aqu Hyd Oxid	er-Sta I 4B) Crust atic Ir rogen dized	ined Lea (B11) overtebra Sulfide Rhizospl of Redu	ites (B13) Odor (C1) neres alor ced Iron (	ng Living Ro	RA 1, 2, [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, and 4B))  Drainage Patterns (B10)  Dry-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C9)  Geomorphic Position (D2)  Shallow Aquitard (D3)
Wetland Hy Primary Indi Surface High W Satura Water Sedime Drift De	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4)		uired; che	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres	er-Sta I 4B) Crust latic Ir lrogen dized l sence	ined Lea (B11) avertebra Sulfide Rhizospl of Redu	tes (B13) Odor (C1) neres alor ced Iron ( ction in Ti	ng Living Ro C4) led Soils (C	RA 1, 2, [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi Surface High W Satura Water Sedime Algal M Iron De	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5)	of one requ	uired; cho	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Rec ☐ Stur	er-Sta I 4B) Crust atic Ir lrogen dized sence ent Iro	ined Lea (B11) overtebra Sulfide Rhizospl of Redu on Redu r Stresse	ites (B13) Odor (C1) neres alor ced Iron ( ction in Til	ng Living Ro	RA 1, 2, [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura Water Sedim Drift De Algal M Iron De Surface	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6)	of one requ		☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Rec ☐ Stur	er-Sta I 4B) Crust atic Ir lrogen dized sence ent Iro	ined Lea (B11) overtebra Sulfide Rhizospl of Redu on Redu r Stresse	tes (B13) Odor (C1) neres alor ced Iron ( ction in Ti	ng Living Ro C4) led Soils (C	RA 1, 2, [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedim Drift De Algal M Iron De Surface  Inundate	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri	of one required in the second	y (B7)	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Rec ☐ Stur	er-Sta I 4B) Crust atic Ir lrogen dized sence ent Iro	ined Lea (B11) overtebra Sulfide Rhizospl of Redu on Redu r Stresse	ites (B13) Odor (C1) neres alor ced Iron ( ction in Til	ng Living Ro C4) led Soils (C	RA 1, 2, [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Primary Indi Surfac  High W Satura Water Sedim Drift D Algal N Iron De Surfac	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri	of one required in the second	y (B7)	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Rec ☐ Stur	er-Sta I 4B) Crust atic Ir lrogen dized sence ent Iro	ined Lea (B11) overtebra Sulfide Rhizospl of Redu on Redu r Stresse	ites (B13) Odor (C1) neres alor ced Iron ( ction in Til	ng Living Ro C4) led Soils (C	RA 1, 2, [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedime Drift De Algal N Iron De Surface Inundat Sparse	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Conc	al Imager	y (B7) ice (B8)	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pred ☐ Red ☐ Stur	er-Sta I 4B) Crust Latic Ir Lrogen dized sence cent Ir Loten ted o er (Ex	ined Lea (B11) avertebra Sulfide Rhizospl of Redu on Redu on Stresso plain in I	tes (B13) Odor (C1) neres alor ced Iron ( ction in Ti ed Plants Remarks)	ng Living Ro C4) led Soils (C	RA 1, 2, [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedime Drift De Algal N Iron De Surface Inundat Sparse	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri	al Imager ave Surfa	y (B7) ace (B8)	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Red ☐ Stur ☐ Oth	er-Sta I 4B) Crust latic Ir lrogen dized sence ent Ir nted o er (Ex	ined Lea t (B11) nvertebra Sulfide Rhizospl of Redu on Redu r Stresse plain in I	otes (B13) Odor (C1) neres alor ced Iron ( ction in Ti ed Plants Remarks)	ng Living Ro C4) led Soils (C	RA 1, 2, [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedime Drift De Algal N Iron De Surface Inundat Sparse	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Conc rvations: ter Present?	al Imager	y (B7) ice (B8)	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Red ☐ Stur ☐ Oth	er-Sta I 4B) Crust latic Ir lrogen dized sence ent Ir nted o er (Ex	ined Lea t (B11) nvertebra Sulfide Rhizospl of Redu on Redu r Stresse plain in I	tes (B13) Odor (C1) neres alor ced Iron ( ction in Ti ed Plants Remarks)	ng Living Ro C4) led Soils (C	RA 1, 2, [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedime Drift De Algal M Iron De Surface Inundate Sparse  Field Obset Surface Water Water Table Saturation F	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Concervations: ter Present? Present?	al Imager ave Surfa	y (B7) ace (B8)	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Red ☐ Stur ☐ Oth	er-State I 4B) Crust atic Irrogen dized sence eent Irrogen teen (Ex	ined Lea (B11) avertebra Sulfide Rhizospl of Redu on Redur r Stresso plain in I	tes (B13) Odor (C1) neres alor ced Iron ( ction in Til ed Plants Remarks)	ng Living Ro C4) led Soils (C (D1)( <b>LRR</b> A	RA 1, 2, [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedim Drift Do Algal M Iron Do Surface Inundat Sparse  Field Obser Surface Wat Water Table Saturation F (includes ca	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Concervations: ter Present?	al Imager ave Surfa Yes ⊠ Yes □ Yes □	y (B7) ice (B8) No □ No ⊠ No ⊠	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Red ☐ Stur ☐ Oth ☐ Depth (i ☐ Depth (i ☐ Depth (i	er-State I 4B) Crust atic Irrogen dized sence sent Irrogen tred o er (Ex	ined Lea (B11) ivertebra Sulfide Rhizospl of Redu on Redur r Stresse plain in I	tes (B13) Odor (C1) neres alor ced Iron ( ction in Ti ed Plants Remarks)	ng Living Ro C4) led Soils (0 (D1)(LRR A	RA 1, 2, [ [ [ [ [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedim Drift Do Algal M Iron Do Surface Inundat Sparse  Field Obser Surface Wat Water Table Saturation F (includes ca	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Conc rvations: ter Present? e Present? Present? pillary fringe)	al Imager ave Surfa Yes ⊠ Yes □ Yes □	y (B7) ice (B8) No □ No ⊠ No ⊠	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Red ☐ Stur ☐ Oth ☐ Depth (i ☐ Depth (i ☐ Depth (i	er-State I 4B) Crust atic Irrogen dized sence sent Irrogen tred o er (Ex	ined Lea (B11) ivertebra Sulfide Rhizospl of Redu on Redur r Stresse plain in I	tes (B13) Odor (C1) neres alor ced Iron ( ction in Ti ed Plants Remarks)	ng Living Ro C4) led Soils (0 (D1)(LRR A	RA 1, 2, [ [ [ [ [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedim Drift Do Algal M Iron Do Surface Inundat Sparse  Field Obser Surface Wat Water Table Saturation F (includes ca	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Conc rvations: ter Present? e Present? Present? pillary fringe)	al Imager ave Surfa Yes ⊠ Yes □ Yes □	y (B7) ice (B8) No □ No ⊠ No ⊠	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Red ☐ Stur ☐ Oth ☐ Depth (i ☐ Depth (i ☐ Depth (i	er-State I 4B) Crust atic Irrogen dized sence sent Irrogen tred o er (Ex	ined Lea (B11) ivertebra Sulfide Rhizospl of Redu on Redur r Stresse plain in I	tes (B13) Odor (C1) neres alor ced Iron ( ction in Ti ed Plants Remarks)	ng Living Ro C4) led Soils (0 (D1)(LRR A	RA 1, 2, [ [ [ [ [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedim Inon De Surface Inundar Sparse  Field Obser Surface War Water Table Saturation F (includes ca	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Conc rvations: ter Present? e Present? Present? pillary fringe)	al Imager ave Surfa Yes ⊠ Yes □ Yes □	y (B7) ice (B8) No □ No ⊠ No ⊠	☐ Wate 4A, and ☐ Salt ☐ Aqu ☐ Hyd ☐ Oxid ☐ Pres ☐ Red ☐ Stur ☐ Oth ☐ Depth (i ☐ Depth (i ☐ Depth (i	er-State I 4B) Crust atic Irrogen dized sence sent Irrogen tred o er (Ex	ined Lea (B11) ivertebra Sulfide Rhizospl of Redu on Redur r Stresse plain in I	tes (B13) Odor (C1) neres alor ced Iron ( ction in Ti ed Plants Remarks)	ng Living Ro C4) led Soils (0 (D1)(LRR A	RA 1, 2, [ [ [ [ [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)

Project/Site: Weyerhaeuser		City/C	County:	Federal Wa	ay/King	Sampling Date:	7/19/2016	
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point:	: DE-UPL1	
Investigator(s): Jennifer Marriott			s	Section, Tov	vnship, Range: Section 16	, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief	(concave,	convex, none): concave	Slc	pe (%): <u>5</u>	
Subregion (LRR): LRR A	Lat: 47.30	08117	7		Long: <u>-122.297907</u>	Datu	m: <u>NAD83</u>	<b>;</b>
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	oes			NWI classificati	on: None		
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	es 🛚	No ☐ (If	no, explain in Remarks.)			
Are Vegetation No, Soil No, or Hydrology No significantly di	sturbed?	A	Are "No	rmal Circur	mstances" present? Yes	⊠ No □		
Are Vegetation No, Soil No, or Hydrology No naturally proble	ematic?	(It	f neede	ed, explain	any answers in Remarks.)			
SUMMARY OF FINDINGS - Attach site map	showing	sam	pling	point lo	cations, transects, i	important fe	atures,	etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒			la 4laa	Commissi	A			
Hydric Soil Present? Yes ☐ No ☒				Sampled <i>i</i> a Wetland	_			
Wetland Hydrology Present? Yes ☐ No ☒			Within	ra wedan	163   160			
Remarks:								
VEGETATION – Use scientific names of plant								
VEGETATION – Ose scientific fiames of plant	Absolute	Dom	ninant I	ndicator	Dominance Test worksh	noot:		
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Spe			
Populus tremuloides	40	<u>Y</u>	<u>F</u>	FACU_	That Are OBL, FACW, or	FAC: 0	(A	١)
2					Total Number of Dominar			
3.					Species Across All Strata	i: <u>4</u>	(B)	)
4.	40				Percent of Dominant Spe			
Sapling/Shrub Stratum (Plot size: 15ft)	40	= 10	olai Co	vei	That Are OBL, FACW, or	FAC: <u>0</u>	(A/	/B)
Populus tremuloides	30	<u>Y</u>	<u>F</u>	FACU_	Prevalence Index works	heet:		
2. Gaultheria shallon	25	<u>Y</u>	<u>F</u>	FACU_	Total % Cover of:			
3.					OBL species			
4.					FACW species			
5.	55				FAC species			
Herb Stratum (Plot size: 5ft)	<u>55                                   </u>	- 10	olai Co	VCI	UPL species			
Polystichum munitum	5			FACU_	Column Totals:		(	(B)
2. Rubus ursinus	<u>70</u>	<u>Y</u>	<u>F</u>	FACU_	Danielan en la dece	D/A		
3.					Prevalence Index = Hydrophytic Vegetation			
4	· · · · · · · · · · · · · · · · · · ·				Dominance Test is >5			
5. 6.					☐ Prevalence Index is ≤			
7.					☐ Morphological Adapta			3
8.					data in Remarks of	•	,	
	<u>75</u>	= To	otal Co	ver	☐ Problematic Hydrophy	ytic Vegetation <sup>1</sup>	(Explain)	
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil a	and watland hyd	Irology mus	ct
1. None				-	be present, unless disturb	ped or problema	itic.	31
2	0	= To	otal Co	ver	Hydrophytic			
or Born Correction Host Christians					Vegetation	□ No □		
% Bare Ground in Herb Stratum <u>25</u> % Cove	er of Biotic (	rust _			Present? Yes	□ No ⊠		
Tromano.								

Depth	cription: (Descrit Matrix		eptn nee		ox Feature		or confirm	n tne abser	nce of indicators.)
(inches)	Color (moist)	%	Color	(moist)	<u>%</u>		Loc <sup>2</sup>	Texture	Remarks
1-16	10YR 3/3	100		· · · · · · ·				loam	
<u> </u>	<u></u>							100.11	
	-		-						
	-								
		<del></del>							
								-	
			-		_			-	<del>_</del>
	oncentration, D=D						ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
_	Indicators: (App	licable to				ed.)			cators for Problematic Hydric Soils <sup>3</sup> :
Histosol	` '			andy Redox (					2 cm Muck (A10)
☐ Histic Ep	oipedon (A2)			ripped Matrix amy Mucky I	` '	(ovcont	MI DA 1\\		ed Parent Material (TF2) /ery Shallow Dark Surface (TF12)
	en Sulfide (A4)			amy Gleyed I			WILKA I))	<del></del>	ther (Explain in Remarks
	d Below Dark Surfa	ace (A11)		pleted Matrix	, ,				arer (Explain in Nemarks
•	ark Surface (A12)	(, (, (, (,		edox Dark Su	` '				
	Mucky Mineral (S1)		De	epleted Dark	Surface (F	7)		<sup>3</sup> Indio	cators of hydrophytic vegetation and
☐ Sandy G	Bleyed Matrix (S4)		☐ Re	edox Depress	sions (F8)			W	etland hydrology must be present,
								ur	nless disturbed or problematic.
Restrictive	Layer (if present)	:							
Type:			_						
Depth (in	ches):		_					Hydric S	Soil Present? Yes 🗌 No 🛛
Remarks. N	o hydric soil indica	iors identiii	lea						
LIVERGLA									
HYDROLO									
•	drology Indicator								
-	cators (minimum o	t one requi	red; chec						econdary Indicators (2 or more required)
	e Water (A1)			☐ Water-St 4A, and 4B)	)	/es (B9) (	except ML	.RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2 4A, and 4B))
_ •	/ater Table (A2)			☐ Salt Cru	,				☐ Drainage Patterns (B10)
	tion (A3)			Aquatic					Dry-Season Water Table (C2)
	Marks (B1)			Hydroge		` '	5	. (00)	Saturation Visible on Aerial Imagery (CS
	ent Deposits (B2)				l Rhizosph			oots (C3)	Geomorphic Position (D2)
	eposits (B3)			Presenc				<b>10</b> )	Shallow Aquitard (D3)
_	Mat or Crust (B4)				ron Reduc		`	,	FAC-Neutral Test (D5)
	eposits (B5)				or Stresse xplain in R		DI)(LKK A	4)	Raised Ant Mounds (D6(LRR A)  Frost-Heave Hummocks (D7)
	e Soil Cracks (B6)		(DT)	☐ Other (E	хріані ін к	emarks)			□Flost-neave nullillocks (D1)
	tion Visible on Aeri								
	ly Vegetated Conc	ave Surfac	e (B8)						
Field Obser									
	ter Present?			Depth (inche					
Water Table				Depth (inche					<del>.</del> –
	pillary fringe)			Depth (inche				_	logy Present? Yes ☐ No ⊠
Describe Re	ecorded Data (strea	ırn gauge,	rnonitorin	g well, aerial	pnotos, pr	evious ins	spections),	ır available:	:
Dame order Al		. i.e. ali a - 1 -	(alameter	1					
kemarks: N	o wetland hyrology	indicators	iaentified	1					

Project/Site: Weyerhaeuser		City/C	ounty	: <u>Federal W</u>	/ay/King	Sampling Date	e: <u>7/19/2016</u>	
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Poir	nt: DE-WET1	
Investigator(s): Jennifer Marriott				Section, To	wnship, Range: Section	n 16, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	f (concave,	convex, none): Concav	<u>ve</u> S	lope (%): 2	
Subregion (LRR): <u>LRR A</u>	_ Lat: 47.30	08117	,		Long: <u>-122.297907</u>	Dat	tum: NAD83	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sign	-				ormal Circumstances" p		No □	
Are Vegetation, Soil, or Hydrology natu					ed, explain any answers	_		
SUMMARY OF FINDINGS - Attach site map							eatures. e	łc.
	<u>g</u>		<b>P</b>	<b>5</b> Po	,	<u></u>		
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			Is the	e Sampled	Area			
Wetland Hydrology Present? Yes ⊠ No □			withi	n a Wetlan	nd? Yes ⊠	No 🗌		
Remarks: This atypical wetland occurs within a broad area	where the t	till is s	hallov	v; the deline	eation includes area of	upland as the wet	land winds	
through the trees.								
VEGETATION – Use scientific names of plan	ts.							
- O. J. (D. J. 200)	Absolute			Indicator	Dominance Test wo	rksheet:		
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant		(4)	
Populus balsamifera     Fraxinus excelsior					That Are OBL, FACW	, or FAC: <u>2</u>	(A)	
					Total Number of Dom Species Across All St		(D)	
4.							(B)	
<u> </u>	90		otal Co		Percent of Dominant : That Are OBL, FACW		(A/R	,
Sapling/Shrub Stratum (Plot size: 15ft)							(////	,
1. Fraxinus excelsior					Prevalence Index wo			
2. Rubus spectabilis	20	<u>Y</u>		FAC		: Multi		
					OBL species			
4					FACW species FAC species			
5	100		otal C		FACU species			
Herb Stratum (Plot size: 5ft)	100	- 10	Jiai Ci	JVGI		x 5 =		
1. None					Column Totals: 50			.)
2.								,
3.					Prevalence Inde			
4.					Hydrophytic Vegeta			
5					Dominance Test i			
6.					☐ Prevalence Index			
7					☐ Morphological Ad data in Remai	aptations' (Providents or on a separation and the contraction of the c		
8.					□ Problematic Hydro	•	,	
Woody Vine Stratum (Plot size: 15ft)	0	= Tc	otal Co	over	,		,	
1. None					<sup>1</sup> Indicators of hydric s			
2.					be present, unless dis	sturbed or problem	natic.	
	0	= To	otal Co	over	Hydrophytic			
% Bare Ground in Herb Stratum 100 % Cove	er of Biotic (	Crust _			Vegetation Present? Y	∕es ⊠ No □		
Remarks: Fraxinus excelsior (European ash) is considered	to be a we	tland	plant i	n Europe.	We can safely assume	this test plot repre	sents	
hydrophytic vegetation.								

			epth ne				or confirm	n the absei	nce of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color	(moist)	ox Feature %		Loc <sup>2</sup>	Texture	Remarks
0-12		100			<u> </u>			Silty loam	
0-12	1011(2/1	100						Only loain	
	-								
	Concentration, D=D						ed Sand G		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
-	Indicators: (App	licable to				ea.)			cators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	oipedon (A2)			andy Redox ( tripped Matrix					2 cm Muck (A10) led Parent Material (TF2)
☐ Black Hi				oamy Mucky	` ,	(except	MLRA 1))		/ery Shallow Dark Surface (TF12)
	en Sulfide (A4)			namy Gleyed			,,		Other (Explain in Remarks
☐ Deplete	d Below Dark Surfa	ace (A11)	□ De	epleted Matrix	(F3)				· ·
	ark Surface (A12)			ledox Dark Su	, ,				
	Mucky Mineral (S1)			epleted Dark		7)			cators of hydrophytic vegetation and
☐ Sandy G	Bleyed Matrix (S4)		⊔к	edox Depress	sions (F8)				retland hydrology must be present,
Postriotivo	Layer (if present)							ui	nless disturbed or problematic.
	, , ,								
	achao).							Lludria 6	Sail Bracant2 Vac M No 🗆
	iches):			0-11-1-		haratel a tra-			Soil Present? Yes ⊠ No □
Remarks: 5	oli was very dry, na	ardpan at	12 inches	s. Soli is assu	med to be	nyanc bas	sea on nya	irology and	hydrophytic plants.
HYDROLC	)GY								
Wetland Hy	drology Indicator	s:							
Primary Indi	cators (minimum o	f one requ	ired; che						econdary Indicators (2 or more required)
☐ Surfac	e Water (A1)			☐ Water-St 4A, and 4B)		res (B9) (e	except ML	.RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
_ •	Vater Table (A2)			☐ Salt Cru	` ,				Drainage Patterns (B10)
l	tion (A3)			☐ Aquatic		, ,			☐ Dry-Season Water Table (C2)
	Marks (B1)			Hydroge					Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)			Oxidized	•			oots (C3)	Geomorphic Position (D2)
	eposits (B3)			Presence				20)	Shallow Aquitard (D3)
_	Mat or Crust (B4)			☐ Recent I					FAC-Neutral Test (D5)
	eposits (B5)				or Stresse Explain in R	•	JI)(LKK A	<b>4</b> )	Raised Ant Mounds (D6(LRR A)  Frost-Heave Hummocks (D7)
	e Soil Cracks (B6)	-11	(DZ)	☐ Other (L	.хріані ін К	emarks)			Li rost-rieave ridiffillocks (D1)
	tion Visible on Aeri								
	ly Vegetated Conc	ave Surrac	ce (B8)						
Field Obse		v 🗖	. 57	5 4 6 1	,				
	ter Present?		No ⊠	Depth (inche					
Water Table			No 🛛	Depth (inche					
	pillary fringe)		No ⊠	Depth (inche				•	logy Present? Yes ⊠ No □
Describe Re	ecorded Data (strea	am gauge,	monitorii	ng well, aerial	photos, pr	evious ins	pections),	if available	
Remarks: S	urface ponding and	d saturatio	n within t	he upper 12"	was previo	usly noted	l in Januar	y 2016 thou	ugh wetland hydrology was not present at
accompanies of the control of the co						•		-	0 7 07 1
our evaluation	on in April 2016.					•			, 3, 1

Project/Site: Weyerhaeuser		City/Co	ounty:	Federal W	ay/King	_ Sam	pling Date: <u>4/8/1</u>	6
Applicant/Owner: Federal Way Campus, LLC					State: WA	_ Sam	pling Point: <u>DF-l</u>	JPL1
Investigator(s): Richard Tveten			5	Section, To	wnship, Range: Section	16, T2	1N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Local	relief	(concave,	convex, none): convex		Slope (%	%): <u>5</u>
Subregion (LRR): <u>LRR A</u>	_ Lat: 47.30	08059			Long: -122.297303		Datum: N/	AD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	pes			NWI classific	cation: 1	None	
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	s 🏻	No □ (If	no, explain in Remarks	.)		_
Are Vegetation No, Soil No, or Hydrology No significantly di	•			•	mstances" present? Ye	•	No 🗌	
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remark		_	
SUMMARY OF FINDINGS – Attach site map		,		•	•	,	ortant featur	res etc
	Jilo Willig	<u> </u>	<u> </u>	, point ic	outions, transcott	<u>,,p</u>	ortant reatar	03, 010.
Hydrophytic Vegetation Present?  Yes No			Is the	Sampled	Area			
Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☒ No ☐		,	withiı	n a Wetlan	d? Yes □	No 🛚		
Remarks:								
VEGETATION - Use scientific names of plant	s.							
Total Objections (Plates's as 00%)	Absolute			Indicator	Dominance Test wor	ksheet	:	
Tree Stratum (Plot size: 30ft)  1. Abies grandis	<u>% Cover</u> 40			<u>Status</u> FACU	Number of Dominant S That Are OBL, FACW,			(4)
Ables grandis     Fraxinus excelsior				NL NL	That Ale Obl, FACW,	OI FAC	,. <u>1</u>	_ (A)
3					Total Number of Domi		<u>5</u>	(B)
4.					Species Across Air Str	ala.	<u> </u>	_ (D)
	80				Percent of Dominant S That Are OBL, FACW,			(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)								_ (/ (/ 2)
Oemleria cerasiformis	20	Yes		FACU_	Prevalence Index wo			
2.					Total % Cover of:			
3.					OBL species			
4.				_	FAC species			
5.	20		tal Co	n/Or	FACU species 120			
Herb Stratum (Plot size: 5ft)	20	_ 10	iai Co	vei	UPL species			
Polystichum munitum	20	Yes		FACU	Column Totals: 120		(A) <u>480</u>	(B)
2. Rubus spectabilis	40	Yes		FAC				、 /
3.					Prevalence Index			
4.					Hydrophytic Vegetati		icators:	
5					☐ Dominance Test is			
6.					☐ Prevalence Index i		1.5	
7		-			☐ Morphological Ada data in Remark		s' (Provide supp i a separate shee	
8.					☐ Problematic Hydro		•	,
Woody Vine Stratum (Plot size: 15ft)	60	= 101	tal Co	ver	·			,
1. None					<sup>1</sup> Indicators of hydric so			y must
2.					be present, unless dist	urbed o	or problematic.	
	0	= Tot	tal Co	ver	Hydrophytic			
% Bare Ground in Herb Stratum 40 % Cove	er of Biotic C	Crust 0	)		Vegetation Present? Yes	es 🗌	No ⊠	
Remarks: F. excelsior (European ash) is not listed in the U				etland tree			<u> </u>	
					•			

Profile Desc Depth	Matrix			Pod	ox Feature	•				
(inches)	Color (moist)	%	Color (		<u> </u>		Loc <sup>2</sup>	Texture	Remarks	
0-1									Duff	
1-16	10YR 2/2	100						Loam		
1 10	1011(2/2		<u> </u>					Loam		
			_			· ———		-	_	_
						· ———		-		
	-					·		-		
					_				_	
			_							
<sup>1</sup> Type: C=C	oncentration, D=D	epletion, I	RM=Reduc	ed Matrix, C	S=Covered	d or Coate	ed Sand G	rains. ²L	Location: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators: (Appl	icable to	all LRRs,	unless othe	erwise not	ed.)		Indica	ators for Problematic Hydric Soils <sup>3</sup> :	
☐ Histosol	` '		☐ Sa	ndy Redox (	S5)			□ 2	cm Muck (A10)	
	pipedon (A2)			ipped Matrix	` '				ed Parent Material (TF2)	
☐ Black Hi	` '			amy Mucky I		(except	MLRA 1))	· <del></del>	ery Shallow Dark Surface (TF12)	
	n Sulfide (A4) d Below Dark Surfa	00 (111)		my Gleyed loleted Matrix	. ,			∐ Oti	her (Explain in Remarks	
	ark Surface (A12)	ice (ATT)		dox Dark Su	` '					
	lucky Mineral (S1)		<del></del>	pleted Dark	` '	7)		<sup>3</sup> Indica	ators of hydrophytic vegetation and	
-	Bleyed Matrix (S4)			dox Depress	•	,			etland hydrology must be present,	
								un	less disturbed or problematic.	
Restrictive	Layer (if present):	1								
Type:										
Depth (in	ches):							Hydric S	oil Present? Yes ☐ No ⊠	
Remarks: So	oil appears to have	been dis	turbed at se	ome point.				•		
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary Indi	cators (minimum o	f one requ	uired; check	call that app	oly)			Sec	condary Indicators (2 or more required)	
☐ Surface	e Water (A1)	-		☐ Water-St	ained Leav	es (B9) (	except ML	RA 1, 2,	☐ Water Stained Leaves (B9) (MLRA	1, 2,
_	, ,			4A, and 4B)		, , ,	·		4A, and 4B))	
_ •	/ater Table (A2)			Salt Cru	` ,				Drainage Patterns (B10)	
	tion (A3)			Aquatic					Dry-Season Water Table (C2)	
☐ Water	, ,			☐ Hydroge		` '			Saturation Visible on Aerial Imagery	(C9)
	ent Deposits (B2)				Rhizosph		_	ots (C3)	Geomorphic Position (D2)	
	eposits (B3)			☐ Presenc				١٥)	Shallow Aquitard (D3)	
_	Mat or Crust (B4)				ron Reduct		,	,	FAC-Neutral Test (D5)	
	eposits (B5) e Soil Cracks (B6)				or Stressed Explain in R	•	JI)(LKK F	•	☐ Raised Ant Mounds (D6( <b>LRR A</b> ) ☐ Frost-Heave Hummocks (D7)	
Sullaci	e Suil Clacks (Du)			☐ Other (L	.χριαιιτιτι Ν	emarks)				
☐ laa.ala.4	: \ /:-: -	.								
	ion Visible on Aeria									
☐ Sparsel	y Vegetated Conca						F			
Sparsel	y Vegetated Concavations:	ave Surfa	ce (B8)	Donath (in also						
Sparsel Field Obser Surface Wat	y Vegetated Concervations: er Present?	ave Surfa	ce (B8)	Depth (inche						
☐ Sparsel Field Obser Surface Water Table	y Vegetated Concavations: er Present? Present?	Yes  Yes	ce (B8)  No ⊠ [ No ⊠ [	Depth (inche	es):		Mad	and Hudnal	anu Brassata. Vas M. Na 🗆	
☐ Sparsel  Field Obser  Surface Water Table  Saturation P	y Vegetated Concavations: er Present? Present? resent?	ave Surfa	ce (B8)  No ⊠ [ No ⊠ [		es):		Wetl	and Hydrol	ogy Present? Yes ⊠ No □	
☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	y Vegetated Concavations: er Present? Present? resent?	Yes  Yes  Yes  Yes  Yes  Yes  Yes	No 🖂 [ No 🖂 [ No 🖂 [	Depth (inche Depth (inche	es): es): <u>9</u>				ogy Present? Yes ⊠ No □	
☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	y Vegetated Concarvations: er Present? Present? resent? pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes  Yes	No 🖂 [ No 🖂 [ No 🖂 [	Depth (inche Depth (inche	es): es): <u>9</u>				ogy Present? Yes ⊠ No □	
☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	y Vegetated Concarvations: er Present? Present? resent? pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	ce (B8)  No ⊠ [ No ⊠ [ No □ [ , monitoring	Depth (inche Depth (inche	es): es): <u>9</u>				ogy Present? Yes ⊠ No □	
☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	y Vegetated Concarvations: er Present? Present? resent? pillary fringe) corded Data (strea	Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	ce (B8)  No ⊠ [ No ⊠ [ No □ [ , monitoring	Depth (inche Depth (inche	es): es): <u>9</u>				ogy Present? Yes ⊠ No □	

Project/Site: Weyerhaeuser		City/C	County:	Federal W	/ay/King	Sampling Date:4/8	8/16
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: D	F-WET1
Investigator(s): Richard Tveten			§	Section, To	wnship, Range: Section	on 16, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief	(concave,	convex, none): conca	ve depressiom Slope	e (%): <u>0</u>
Subregion (LRR): <u>LRR A</u>	Lat: <u>47.3</u> (	08059	)		Long: <u>-122.297303</u>	Datum:	: <u>NAD83</u>
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	pes			NWI class	ification: None	
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Ye	es 🛛	No ☐ (If	f no, explain in Remarl	ks.)	
Are Vegetation No, Soil Yes, or Hydrology No significantly	•				cumstances" present?		
Are Vegetation No, Soil No, or Hydrology No naturally probl					any answers in Rema		
SUMMARY OF FINDINGS – Attach site map		•			•	,	tures. etc.
-			ļ <u>-</u>	, , , , , , , , , , , , , , , , , , , ,	,	,	,
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			Is the	Sampled			
Wetland Hydrology Present? Yes ⊠ No □			withi	n a Wetlan	nd? Yes ⊠	No □	
Remarks: Soils disturbed at some point many years ago.							
VEGETATION – Use scientific names of plan	ts.						
	Absolute			Indicator	Dominance Test we	orksheet:	
Tree Stratum (Plot size: <u>30ft</u> )	% Cover			-	Number of Dominan		(4)
1. Fraxinus excelsior				NL EAC	That Are OBL, FAC	<i>W</i> , or FAC: <u>5</u>	(A)
Populus balsamifera     3.					Total Number of Dor		(D)
3 4					Species Across All S	Strata: <u>6</u>	(B)
	80		otal Co		Percent of Dominant	t Species W, or FAC: <u>83</u>	(A/R)
Sapling/Shrub Stratum (Plot size: 15ft)							(A/B)
Spiraea douglasii		Yes		FACW_	Prevalence Index w		
2. Rubus spectabilis				FAC		of: Multiply	
3.						x 1 = x 2 =	
4 5.						x 3 =	
5.	40				-	x 4 =	
Herb Stratum (Plot size: 5ft)	10		otal Oo			x 5 =	
1. Carex obnupta	10	Yes		OBL	Column Totals:		(B)
2. Carex deweyana	10	Yes		FAC	Daniel and Land	day D/A	
3					Hydrophytic Vegeta	dex = B/A =	
4					Dominance Test		
5 6.					☐ Prevalence Inde		
6. 7.						daptations1 (Provide su	upporting
8.					data in Rema	arks or on a separate s	heet)
	20	= To	otal Co	ver	☐ Problematic Hyd	Irophytic Vegetation <sup>1</sup> (E	Explain)
Woody Vine Stratum (Plot size: 15ft)							
1. None						soil and wetland hydro listurbed or problemation	
2.					•		
	0	= Tc	otal Co	ver	Hydrophytic Vegetation		
· · · · · · · · · · · · · · · · · · ·	er of Biotic C	_			Present?	Yes ⊠ No □	
Remarks: Fraxinus excelsior (European ash) is considered hydrophytic vegetation.	to be a wet	tland p	plant ir	n Europe V	Ve can safely assume	this test plot represent	s

Depth	cription: (Describ Matrix		aeptn ne		ox Feature		or contirn	n the abse	nce of indicato	ors.)	
(inches)	Color (moist)	%	Colo	r (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-9	10YR 2/1	100						Muck			
9-16	10YR 6/4	100						Silt sand			
-						-					
	oncentration, D=D						ed Sand G		<sup>2</sup> Location: PL=		
_	Indicators: (App	licable to				ed.)			cators for Prob		ydric Soils³:
☐ Histosol	, ,			Sandy Redox (					2 cm Muck (A10	,	
│	oipedon (A2) stic (A3)			Stripped Matrix Loamy Mucky		(except	MI RA 1))		ted Parent Mate /ery Shallow Da	` ,	(TF12)
l <del></del>	n Sulfide (A4)			oamy Gleyed	•				other (Explain in		(11 12)
☐ Depleted	d Below Dark Surfa	ace (A11)		epleted Matrix	(F3) `´				` .		
	ark Surface (A12)			Redox Dark Su	. ,						
	lucky Mineral (S1)			Depleted Dark	•	7)			cators of hydror		
□ Sandy G	ileyed Matrix (S4)		U !	Redox Depres	sions (F8)				etland hydrolog nless disturbed		
Restrictive	Layer (if present)	) <del>:</del>							THOOS GISTATECT	or problem	idilo.
Type:											
, , , <u> </u>	ches):							Hvdric S	Soil Present?	Yes ⊠	No □
Remarks:								, , ,			
HYDROLO	CV										
	drology Indicator	re:									
-	cators (minimum c		iired: ch	ack all that ann	alv)			S	econdary Indica	ators (2 or n	nore required)
	e Water (A1)	one requ	incu, cri	<u>کواد طاا دااطا طی.</u> Water-St ∐		/es (B9) (	except MI		-		s (B9) ( <b>MLRA 1, 2,</b>
Canao	o water (/tr)			4A, and 4B)		(00 (00) (	cxoopt iiiL	, <u>.</u> .,	4A, and 4B))	iliou Louvo	5 (B5) (MEICA 1, 2,
	ater Table (A2)			☐ Salt Cru	st (B11)				☐ Drainage I	Patterns (B	10)
Saturar     Saturar	tion (A3)			☐ Aquatic	Invertebrat	es (B13)			☐ Dry-Seaso	on Water Ta	able (C2)
	Marks (B1)			Hydroge		, ,					Aerial Imagery (C9)
	ent Deposits (B2)				Rhizosph		-	oots (C3)		nic Position	` '
	eposits (B3)				e of Reduc	•	•	<b>`</b> C\	☐ Shallow A		,
_	lat or Crust (B4) eposits (B5)			☐ Recent I	or Stresse		`	,	☐ FAC-Neut	,	D6( <b>LRR A</b> )
	e Soil Cracks (B6)				Explain in R		D1)( <b>LIKIK</b> P	•)	☐ Frost-Heave		
	ion Visible on Aeri		/ (B7)								13 (21)
	y Vegetated Conc		` '								
Field Obser	, ,		(20)								
Surface Wat		Yes □	No 🛛	Depth (inche	es):						
Water Table		Yes ⊠	No 🗌	Depth (inche	,						
Saturation P		Yes ⊠	No 🗌	Depth (inche			Wetl	land Hydro	logy Present?	Yes ⊠	No 🗌
(includes ca	pillary fringe)										_
Describe Re	corded Data (strea	am gauge,	monitor	ıng well, aerial	photos, pr	evious ins	spections),	ıt available	:		
Derried											
Remarks:											

Project/Site: Weyerhaeuser		City/Co	ounty: <u>Fe</u>	deral Wa	ay/King	Sampling Date:4/8/	16
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: <u>DC</u>	-UPL
Investigator(s): Richard Tveten			Sect	tion, Tov	vnship, Range: Section 16	, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Local	l relief (co	oncave, o	convex, none): convex	Slope	(%): <u>3</u>
Subregion (LRR): <u>LRR A</u>	_ Lat: 47.30	08021			Long: -122.297457	Datum: !	NAD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8							
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation No, Soil No, or Hydrology No significantly di	-				mstances" present? Yes	⊠ No∏	
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map		•		·	•		ures, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒							
Hydric Soil Present? Yes No			Is the Sa	•	_	_	
Wetland Hydrology Present? Yes ☐ No ☒			within a	Wetland	d? Yes ☐ No		
Remarks:		I					
<b>VEGETATION – Use scientific names of plant</b>	s.						
Troo Stratum (Plot size: 30ft)	Absolute % Cover		inant Indi		Dominance Test worksh		
Tree Stratum (Plot size: 30ft)  1. Thuja plicata	30	Yes		_	Number of Dominant Spe That Are OBL, FACW, or	cies FAC: 2	(A)
2. Acer macrophyllum				CU			_ (//)
3. Pseudotsuga menziesii					Total Number of Dominar Species Across All Strata		(B)
4.					·		(-/
	100	= To	otal Cover		Percent of Dominant Spe That Are OBL, FACW, or		(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)	00	V	<b>5</b> 46	_	Prevalence Index works	hoot	
Rubus armeniacus 2.					Total % Cover of:		v
3.					OBL species		
4.					FACW species		
5.					FAC species		
	30	= To	otal Cover		FACU species	x 4 =	
Herb Stratum (Plot size: 5ft)	00	.,	<b>-</b>	011	UPL species		
1. Rubus ursinus	20	Yes	FAC	CU_	Column Totals:	(A)	(B)
2		-			Prevalence Index =	= B/A =	
3. 4.				<del></del>	Hydrophytic Vegetation		
5.					☐ Dominance Test is >5	50%	
6.					☐ Prevalence Index is ≤	3.0 <sup>1</sup>	
7					Morphological Adapta		
8					☐ Problematic Hydrophy	or on a separate she	•
Woody Vine Stratum (Plot size: 15ft)	20	= To	otal Cover			/iic vegetation (Ex	piairi)
`					<sup>1</sup> Indicators of hydric soil a	and wetland hydrolc	ay must
1. None					be present, unless disturb		0,
	0	= To	otal Cover	. [	Hydrophytic		
% Bare Ground in Herb Stratum 80 % Cove	er of Biotic C				Vegetation Present? Yes	□ No ⊠	
Remarks:	51 OI DIOUG C	Jiust <u>U</u>					

Depth	Matrix			Dada				
(inches)	Matrix Color (moist)	%	Color	(moist)	x Features%Tyr	pe <sup>1</sup> Loc <sup>2</sup>	Texture	Remarks
0-1				<del></del>				Duff
1-9	10YR 3/2	100					Sandy loam	
9-16	10YR 3/3	100						gravelly
9-10	101K 3/3	100					Sandy Idam	graverry
	-					<del></del>		
¹Type: C=Ce	oncentration, D=D	epletion, I	RM=Redu	ced Matrix, CS	S=Covered or 0	Coated Sand G	rains. <sup>2</sup> Loc	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	icable to	all LRRs	, unless othe	rwise noted.)			rs for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	. ,			andy Redox (S				Muck (A10)
-	ipedon (A2)			ripped Matrix	, ,			Parent Material (TF2)
☐ Black His	` '					cept MLRA 1))		Shallow Dark Surface (TF12)
_ , ,	n Sulfide (A4) I Below Dark Surfa	000 (A11)		amy Gleyed N pleted Matrix			☐ Otne	r (Explain in Remarks
	rk Surface (A12)	ice (ATT)		edox Dark Sui	` '			
	lucky Mineral (S1)			epleted Dark S			<sup>3</sup> Indicato	ors of hydrophytic vegetation and
	leyed Matrix (S4)			edox Depress				nd hydrology must be present,
							unles	s disturbed or problematic.
Restrictive	Layer (if present)							
Type:								
Depth (in	ches):						Hydric Soil	Present? Yes ☐ No ⊠
Remarks: No	hydric soil indica	ors					•	
HYDROLO	GY							
	drology Indicator	s:						
	cators (minimum o		uired: ched	k all that appl	v)		Secor	ndary Indicators (2 or more required)
	e Water (A1)				•			<del></del>
_				i i water-Sta	III IEU LEAVES IL	39) (except ML	RA 1. 2.	Water Stained Leaves (B9) (MLRA 1. 2.
				4A, and 4B)	iiileu Leaves (L	39) (except ML		Water Stained Leaves (B9) (MLRA 1, 2, , and 4B))
_ •	ater Table (A2)				,	39) ( <b>except ML</b>	4A	<b>, and 4B)</b> ) Drainage Patterns (B10)
☐ High W ☐ Saturat	` ,			<b>4A, and 4B</b> ) ☐ Salt Crus	,	, , ,	4A	, and 4B <b>)</b> )
Saturat	ion (A3) Marks (B1)			4A, and 4B)  ☐ Salt Crus ☐ Aquatic II ☐ Hydroger	t (B11) nvertebrates (B n Sulfide Odor	313) (C1)	<b>4A</b>	, and 4B)) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Saturat Water I Sedime	ion (A3) Marks (B1) ent Deposits (B2)			4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized	t (B11) nvertebrates (B n Sulfide Odor Rhizospheres	313) (C1) along Living Ro	<b>4A</b>	, and 4B)) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Saturat Water I Sedime	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)			4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence	t (B11) nvertebrates (B n Sulfide Odor Rhizospheres e of Reduced Ir	313) (C1) along Living Ro on (C4)	4A  □  □  □  □  □  □  □  □  □  □  □  □  □	, and 4B)) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Saturat Sedime Drift De	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4)			4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir	t (B11) nvertebrates (B n Sulfide Odor Rhizospheres of Reduced Ir on Reduction i	313) (C1) along Living Ro on (C4) n Tilled Soils (C	4A  □  cots (C3)  □  C6)	, 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)
Saturat  Water I  Sedime  Drift De  Algal M	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5)			4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted of	t (B11) nvertebrates (B n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in	B13) (C1) along Living Ro ron (C4) n Tilled Soils (C unts (D1)(LRR A	00ts (C3)	, 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)
Saturat Water I Sedime Drift De Algal M Iron De Surface	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6)		. (D7)	4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted of	t (B11) nvertebrates (B n Sulfide Odor Rhizospheres of Reduced Ir on Reduction i	B13) (C1) along Living Ro ron (C4) n Tilled Soils (C unts (D1)(LRR A	00ts (C3)	, 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)
Saturat Water I Sedime Drift De Algal M Iron De Surface	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri			4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted of	t (B11) nvertebrates (B n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in	B13) (C1) along Living Ro ron (C4) n Tilled Soils (C unts (D1)(LRR A	00ts (C3)	, 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)
Saturat Water I Sedime Drift De Algal M Iron De Surface Inundati	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy Vegetated Conc			4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted of	t (B11) nvertebrates (B n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in	B13) (C1) along Living Ro ron (C4) n Tilled Soils (C unts (D1)(LRR A	00ts (C3)	, 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)
Saturat Water I Sedime Drift De Algal M Iron De Surface Inundati Sparsel	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy Vegetated Concevations:	ave Surfa	ce (B8)	4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted of	t (B11) nvertebrates (E n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in or Stressed Pla oplain in Remai	B13) (C1) along Living Roton (C4) n Tilled Soils (Cunts (D1)(LRR A	00ts (C3)	, 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)
Saturat Water I Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser Surface Wat	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy Vegetated Concevations: er Present?	ave Surfa	ce (B8)	4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent II  Stunted of  Other (Ex	t (B11) nvertebrates (E n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in or Stressed Pla oplain in Remai	B13) (C1) along Living Rozon (C4) n Tilled Soils (Cants (D1)(LRR Arks)	00ts (C3)	, 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)
Saturat Water I Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser Surface Wat Water Table	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy Vegetated Concevations: er Present? Present?	Yes  Yes	No ⊠	4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted c  Other (Ex	t (B11) nvertebrates (B n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in or Stressed Pla splain in Remail	ala) (C1) along Living Ro on (C4) n Tilled Soils (C ints (D1)(LRR A	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)
Saturat Water I Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy Vegetated Concevations: er Present? Present?	ave Surfa	ce (B8)	4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted c  Other (Ex	t (B11) nvertebrates (E n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in or Stressed Pla oplain in Remai	ala) (C1) along Living Ro on (C4) n Tilled Soils (C ints (D1)(LRR A	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)
Saturat Water I Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes cap	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy Vegetated Concevations: er Present? Present?	Yes  Yes  Yes  Yes  Yes	No ⊠ No ⊠ No ⊠	4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted of  Other (Ex	t (B11) nvertebrates (E n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in or Stressed Pla xplain in Remail	B13) (C1) along Living Rozon (C4) n Tilled Soils (Cants (D1)(LRR Arks)	oots (C3)	, 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)
Saturat Water I Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes cap	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy y Vegetated Concevations: er Present? Present? resent?	Yes  Yes  Yes  Yes  Yes	No ⊠ No ⊠ No ⊠	4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted of  Other (Ex	t (B11) nvertebrates (E n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in or Stressed Pla xplain in Remail	B13) (C1) along Living Rozon (C4) n Tilled Soils (Cants (D1)(LRR Arks)	oots (C3)	, 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)
Saturat  Water I  Sedime  Drift De  Algal M  Iron De  Surface  Inundati  Sparsel  Field Obser  Surface Wat  Water Table  Saturation P (includes cap  Describe Re	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy y Vegetated Concevations: er Present? Present? resent?	Yes	No 🖂 No 🖂 No 🖂 No 🖂 no itorir	4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted of  Other (Ex	t (B11) nvertebrates (E n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in or Stressed Pla xplain in Remail	B13) (C1) along Living Rozon (C4) n Tilled Soils (Cants (D1)(LRR Arks)	oots (C3)	, 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)
Saturat  Water I  Sedime  Drift De  Algal M  Iron De  Surface  Inundati  Sparsel  Field Obser  Surface Wat  Water Table  Saturation P (includes cap  Describe Re	ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy vegetated Concevations: er Present? Present? resent? corded Data (streat	Yes	No 🖂 No 🖂 No 🖂 No 🖂 no itorir	4A, and 4B)  Salt Crus  Aquatic II  Hydroger  Oxidized  Presence  Recent Ir  Stunted of  Other (Ex	t (B11) nvertebrates (E n Sulfide Odor Rhizospheres of Reduced Ir on Reduction in or Stressed Pla xplain in Remail	B13) (C1) along Living Rozon (C4) n Tilled Soils (Cants (D1)(LRR Arks)	oots (C3)	, 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)

Project/Site: Weyerhaeuser	(	City/C	County	r: <u>Federal W</u>	/ay/King	Sampling Date: 4/8/	16
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: DG	i-WET1
Investigator(s): Richard Tveten				Section, To	wnship, Range: Section 16	5, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	f (concave,	convex, none): Concave	Slope (	(%): <u>5</u>
Subregion (LRR): <u>LRR A</u>	Lat: 47.30	08021			Long: <u>-122.297457</u>	Datum: <u>N</u>	NAD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slop	oes			NWI classificati	ion: None	
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Yo	es 🛛	No ☐ (If	no, explain in Remarks.)		
Are Vegetation No, Soil No, or Hydrology No significantly di	sturbed?	A	Are "N	ormal Circu	ımstances" present? Yes	⊠ No □	
Are Vegetation No, Soil No, or Hydrology No naturally proble	ematic?	(1	f need	ded, explain	any answers in Remarks.)	)	
SUMMARY OF FINDINGS - Attach site map s	showing	sam	pling	g point lo	ocations, transects,	important featι	ıres, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □							
Hydric Soil Present? Yes ⊠ No □				e Sampled			
Wetland Hydrology Present? Yes ⊠ No □			with	in a Wetlan	d? Yes ⊠ No	, <b></b>	
Remarks: Wetlands located within disturbed woods near w	etlands DE	and [	)F				
VEGETATION – Use scientific names of plant							
Tree Stratum (Plot size: 30ft)	Absolute % Cover			Indicator Status	Dominance Test worksl		
1. None					Number of Dominant Spe That Are OBL, FACW, or		(A)
2.					Total Number of Dominar	nt	
3.					Species Across All Strata		(B)
4.					Percent of Dominant Spe	acies	
Sapling/Shrub Stratum (Plot size: 15ft)	0	= To	otal C	over	That Are OBL, FACW, or		(A/B)
1. Rubus spectabilis	30	Υ		FAC	Prevalence Index works	sheet:	
2.					Total % Cover of:	Multiply by	<u>/:</u>
3.					OBL species	x 1 =	
4.					FACW species	x 2 =	
5.					FAC species	x 3 =	
Harle Christians (Diet einer 5ft)	30	= To	otal C	over	FACU species		
Herb Stratum (Plot size: 5ft)  1. Carex deweyana	15	V		FAC	UPL species		
2.	13			<u>r AC</u>	Column Totals:	(A)	(B)
3.					Prevalence Index =	= B/A =	_
4.					Hydrophytic Vegetation	Indicators:	
5					□ Dominance Test is >5	50%	
6.					☐ Prevalence Index is ≤		
7.					☐ Morphological Adapta	ations¹ (Provide sup <sub> </sub> or on a separate she	
8.					☐ Problematic Hydroph	•	,
Woody Vine Stratum (Plot size: 15ft)	<u>15</u>	= To	otal Co	over		, g	,
1. None					<sup>1</sup> Indicators of hydric soil a	and wetland hydrolo	gy must
2.					be present, unless disturb	oed or problematic.	
	0	= To	otal C	over	Hydrophytic		
% Bare Ground in Herb Stratum 85 % Cove	er of Biotic C	Crust			Vegetation Present? Yes	⊠ No □	
Remarks:				<del></del>		<b>_</b>	

	•		aeptn ne				r or confirm	n the absen	ce of indicators.)
Depth (inches)	Matrix Color (moist)	<u>(</u> %	Colo	r (moist)	dox Featur %	es Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-1									Duff
1-11	10YR 2/1	100					<u> </u>	Muck	
11-16	10YR 5/2	90	100	R 4/6	10		M	Silt	prominent feature
11-10	1011(3/2	<u>30</u>	1011	11 4/0	10		IVI	Oiit	prominent readure
						<del></del> -	·	-	
								-	
							·		
<u> </u>	oncentration, D=D			•			ted Sand G		Location: PL=Pore Lining, M=Matrix.
-	Indicators: (App	licable to				eted.)			ators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	. ,			Sandy Redox Stripped Matri	` '				cm Muck (A10) ed Parent Material (TF2)
☐ Histic Ep	oipedon (A2) stic (A3)			Stripped Matri Loamy Mucky	` '	1 (except	MI RA 1))		ed Parent Material (1F2) ery Shallow Dark Surface (TF12)
_	n Sulfide (A4)			oamy Gleyed			,		her (Explain in Remarks
	Below Dark Surfa	ace (A11)		Depleted Matri		,			· ·
_	rk Surface (A12)			Redox Dark S	,	,		2	
-	lucky Mineral (S1) leyed Matrix (S4)			Depleted Dark Redox Depres	,	,			ators of hydrophytic vegetation and etland hydrology must be present,
☐ Sandy G	lleyed Matrix (34)		· ·	Redux Depres	5510115 (F0)	1			less disturbed or problematic.
Restrictive	Layer (if present)	):						1	
Type:									
Depth (in	ches):							Hydric S	oil Present? Yes ⊠ No □
Remarks:									
HYDROLO	GY								
	drology Indicator	rs:							
•	cators (minimum c		uired; che	eck all that ap	ply)			Sec	condary Indicators (2 or more required)
☐ Surface	e Water (A1)			☐ Water-S	Stained Lea	aves (B9)	except ML	.RA 1, 2,	☐ Water Stained Leaves (B9) (MLRA 1, 2,
				4A, and 4E	,				4A, and 4B))
_ •	ater Table (A2)			☐ Salt Cr	` '				☐ Drainage Patterns (B10)
⊠ Saturat	` '			☐ Aquatio					Dry-Season Water Table (C2)
☐ Water I				☐ Hydrog		, ,			☐ Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2) eposits (B3)				ce of Redu		ng Living Ro	001S (C3)	<ul><li>☐ Geomorphic Position (D2)</li><li>☐ Shallow Aquitard (D3)</li></ul>
	lat or Crust (B4)			Recent		`	,	26)	FAC-Neutral Test (D5)
•	posits (B5)						(D1)( <b>LRR A</b>	,	Raised Ant Mounds (D6(LRR A)
☐ Surface	e Soil Cracks (B6)			Other (	Explain in	Remarks)			☐Frost-Heave Hummocks (D7)
☐ Inundat	ion Visible on Aeri	al Imager	y (B7)						
☐ Sparsel	y Vegetated Cond	ave Surfa	ce (B8)						
Field Obser	vations:								
Surface Wat	er Present?	Yes 🗌	No 🖂	Depth (inch	es):				
Water Table	Present?	Yes ⊠	No 🗌	Depth (inch	es): <u>9</u>				
Saturation P		Yes 🛛	No 🗌	Depth (inch	es): <u>0</u>		Wet	land Hydrol	ogy Present? Yes 🛛 No 🗌
(includes cap Describe Re	oillary fringe) corded Data (strea	am daude	monitor	ing well aeria	al photos r	revious in	spections)	if available:	
20001100 110	Julia Dala (Silbe	gaage	,		p.10103, p			available.	
Remarks:									

State: WA   Sampling Point: DH UPL 1
Absolute Stratum (Plot size: 30ft)  **ESETATION — Use scientific names of plants.**  **EGETATION — Use scientific names of plants.**  **EACL**  **Absolute Stratum**  **Absolute Stratum**  **Position of No. 2 Species?**  **Species?**  **Species?**  **Status No. 2 Status No. 30 Yes FAC.**  **Total Number of Dominant Species Across All Strata: 5 _ (B)  **Total Number of Dominant Species Across All Strata: 5 _ (B)  **Total Number of Dominant Species Across All Strata: 5 _ (B)  **Total Number of Dominant Species Across All Strata: 5 _ (B)
bregion (LRR): LRRA
Map Unit Name: Alderwood gravelly sandy loam, 0 to 8 percent slopes   NWI classification: None
Map Unit Name: Alderwood gravelly sandy loam, 0 to 8 percent slopes   NWI classification: None
Are "Normal Circumstances" present? Yes \ No \  Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)  JMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.  Vegetation Present? Yes \ No \ Section No \ Section No \ No \ Section No \ No \ Section No \ Section No \ Section No \ No \ Section No \ Sectio
Are "Normal Circumstances" present? Yes \ No \  Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)  JMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc.  Vegetation Present? Yes \ No \ Section No \ Section No \ No \ Section No \ No \ Section No \ Section No \ Section No \ No \ Section No \ Sectio
Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)   JMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.     Is the Sampled Area   Within a Wetland?   Yes   No   No   Within a Wetland?
Supplied
Is the Sampled Area
ydric Soil Present? Yes □ No ☑ within a Wetland? Yes □ No ☑ Wetland Hydrology Present? Yes □ No ☑ Within a Wetland? Yes □ No ☑ Present? Yes □ No ☑ Within a Wetland? Yes □ No ☑ Present? Yes □ No ☑ Pr
Wetland Hydrology Present? Yes No No No Note that Absolute Note that A
EGETATION – Use scientific names of plants.    Absolute   Dominant Indicator   Species?   Status   Sta
Absolute Dominant Indicator Species? Status  Thuja plicata 30 Yes FAC Total Number of Dominant Species  Absolute Dominant Indicator Species? Status  Number of Dominant Species  That Are OBL, FACW, or FAC: 2 (A)  Total Number of Dominant Species Species Species Species Species Across All Strata: 5 (B)
Absolute Dominant Indicator Species? Status  Thuja plicata 30 Yes FAC Total Number of Dominant Species  Absolute Dominant Indicator Species? Status  Number of Dominant Species  That Are OBL, FACW, or FAC: 2 (A)  Total Number of Dominant Species Species Species Species Species Across All Strata: 5 (B)
Absolute Dominant Indicator Species? Status  Thuja plicata 30 Yes FAC Total Number of Dominant Species  Absolute Dominant Indicator Species? Status  Number of Dominant Species  That Are OBL, FACW, or FAC: 2 (A)  Total Number of Dominant Species Species Species Species Species Across All Strata: 5 (B)
ree Stratum     (Plot size: 30ft)     % Cover species?     Status status     Number of Dominant Species       . Thuja plicata     30     Yes     FAC     That Are OBL, FACW, or FAC: 2     (A)       . Acer macrophyllum     40     Yes     FACU     Total Number of Dominant Species     Total Number of Dominant Species     Species Across All Strata:     5     (B)
. Thuja plicata
. Acer macrophyllum 40 Yes FACU Total Number of Dominant Species Across All Strata: 5 (B)
. Psuedotsuga menziesii
Percent of Dominant Species  100 = Total Cover That Are OBL. FACW, or FAC: 40 (A/B)
apling/Shrub Stratum (Plot size: 15ft)  . Rubus armeniacus 30 Yes FAC Prevalence Index worksheet:
Total 9/ Cover of: Multiply by:
OBL species x1 =
FACW species x 2 =
FAC species x 3 =
30 = Total Cover FACU species x 4 =
lerb Stratum         (Plot size: 5ft)           UPL species         x 5 =
. Rubus ursinus 20YesFACU Column Totals: (A) (B)
Prevalence Index = B/A =
Hydrophytic Vegetation Indicators:
Dominance Test is >50%
Prevalence Index is ≤3.0 <sup>1</sup>
data in Remarks or on a separate sheet)
20 = Total Cover □ Problematic Hydrophytic Vegetation¹ (Explain)
Voody Vine Stratum (Plot size: 15ft)
1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
= Total Cover Hydrophytic
Vegetation
Bare Ground in Herb Stratum 80 % Cover of Biotic Crust 0 Present? Yes No
demarks:

Profile Desc	cription: (Describe	to the d	epth needed to	document the	e indicator	or confirm	n the absence	of indicators.)
Depth	Matrix			Redox Featu				
(inches)	Color (moist)	<u>%</u>	Color (moist	)	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-1</u>			<u> </u>					Duff
1-9	10YR 3/2	100					Sandy loam	
9-16	10YR 3/3	100					Sandy loam	gravally
9-10	101K 3/3	100	· -				Sandy Idam	graverry
	-		· -					
								. <u></u>
				-				
	-						-	
			· ·				<del></del>	<u> </u>
	oncentration, D=De					ed Sand G		cation: PL=Pore Lining, M=Matrix.
-	Indicators: (Appli	cable to a			oted.)			ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	` '		☐ Sandy R					n Muck (A10)
	pipedon (A2)			Matrix (S6)	-4 /			Parent Material (TF2)
☐ Black Hi				Mucky Mineral (		MLRA 1))		y Shallow Dark Surface (TF12)
_ , ,	n Sulfide (A4)	oo (A11)	•	leyed Matrix (F)	2)		☐ Othe	er (Explain in Remarks
	d Below Dark Surfac ark Surface (A12)	e (ATT)	☐ Depleted	ark Surface (F6	3)			
	fucky Mineral (S1)		<del></del>	Dark Surface	,		<sup>3</sup> Indicate	ors of hydrophytic vegetation and
_	Bleyed Matrix (S4)			epressions (F8	` '			and hydrology must be present,
	,			- C	,			ss disturbed or problematic.
Restrictive	Layer (if present):							·
Type:	, ,							
· · · ·	ches):		_				Hydric Soil	l Present? Yes □ No ⊠
Remarks:	C11C3).		_				Tiyane oon	Tresent: Tes   No
Remarks.								
<b>HYDROLO</b>	GY							
Wetland Hy	drology Indicators							
	cators (minimum of		red: check all th	at annly)			Saco	ndary Indicators (2 or more required)
	e Water (A1)	one requi		ater-Stained Le	avos (B0) (	ovcont MI		
Sullact	e water (AT)			nd 4B)	aves (D9) (	except wit		A, and 4B))
☐ High W	/ater Table (A2)		□ S	alt Crust (B11)				Drainage Patterns (B10)
_	tion (A3)		A	quatic Invertebr	ates (B13)			Dry-Season Water Table (C2)
Water	, ,			ydrogen Sulfide				Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)			xidized Rhizosp	, ,		oots (C3)	Geomorphic Position (D2)
	eposits (B3)			esence of Red			` ´ □	Shallow Aquitard (D3)
	Mat or Crust (B4)			ecent Iron Redu	•	•	C6)	FAC-Neutral Test (D5)
_	eposits (B5)			unted or Stress				Raised Ant Mounds (D6( <b>LRR A</b> )
	e Soil Cracks (B6)			ther (Explain in				Frost-Heave Hummocks (D7)
	ion Visible on Aeria	l Imagery			,			,
	y Vegetated Conca							
Field Obser	<u> </u>	ve Gariao	C (DC)					
		V □	Na 🖂 - Danath	(:b).				
Surface Wat				(inches):				
Water Table				(inches):				
Saturation P		Yes 🗌	No 🛛 Depth	(inches):		Wetl	and Hydrolog	y Present? Yes □ No ⊠
	pillary fringe) corded Data (strear	n gauge.	monitorina well	aerial photos.	previous in	spections).	if available:	
	(2.00	5 - 5 - 7	3	,,		//		
Remarks:								
i tomanto.								
Ĩ								

Project/Site: Weyerhaeuser	(	City/C	County	: <u>Federal W</u>	/ay/King	Sampling	Date: <u>4/8/16</u>	
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling	g Point: <u>DH-W</u>	ET1
Investigator(s): Richard Tveten			;	Section, To	wnship, Range: Section 16	3, T21N, F	R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al reliet	f (concave,	convex, none): Concave		Slope (%)	: <u>5</u>
Subregion (LRR): <u>LRR A</u>								
Soil Map Unit Name: <u>Alderwood gravelly sandy loam, 0 to 8</u>								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation No, Soil No, or Hydrology No significantly di	•			,	ımstances" present? Yes	⊠ No Í	П	
Are Vegetation <u>no</u> , Soil <u>No</u> , or Hydrology <u>No</u> naturally proble					any answers in Remarks.)		_	
		`		•	,		_	
SUMMARY OF FINDINGS – Attach site map s	showing	sam	pling	g point lo	ocations, transects,	importa	ant feature	s, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □			Is the	e Sampled	Area			
Hydric Soil Present? Yes ⊠ No □				n a Wetlan		$\Box$		
Wetland Hydrology Present? Yes ⊠ No □					_			
Remarks:								
VECETATION . Her exicutific names of plant	<u> </u>							
VEGETATION – Use scientific names of plant		Dam		la di sata s	Daminanaa Taat walka	la a a t		
Tree Stratum (Plot size: 30ft)	Absolute % Cover				Dominance Test works			
1. None					Number of Dominant Spe That Are OBL, FACW, or		2	(A)
2.					Total Number of Demine			
3.					Total Number of Dominal Species Across All Strata		2	(B)
4.								` '
	0				Percent of Dominant Spe That Are OBL, FACW, or		100	(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)								
1. Rubus spectabilis	30	<u>Y</u>		FAC	Prevalence Index works		NA alica barbara	
2.					Total % Cover of:			
3.					OBL species			
4					FAC appaies			
5		_	-1-1-0-		FACU appaies			
Herb Stratum (Plot size: 5ft)	30	= 10	otal Co	over	FACU species UPL species			
1. Carex deweyana	15	Y		FAC	Column Totals:			
2.					Column Totals.	(A)		_ (b)
3.	·				Prevalence Index =	= B/A = _		
4.	<u> </u>				Hydrophytic Vegetation	Indicato	ors:	
5.					□ Dominance Test is > 1	50%		
6.					☐ Prevalence Index is ≤	≤3.0¹		
7.					☐ Morphological Adapta			
8.					data in Remarks		•	
	<u>15</u>	= T	otal Co	over	☐ Problematic Hydroph	ytic Vege	tation' (Explai	in)
Woody Vine Stratum (Plot size: <u>15ft</u> )								
1. None					<sup>1</sup> Indicators of hydric soil a be present, unless distur			must
2.		_			Livelyandretia	<u>·</u>		
	0	= T	otal Co	over	Hydrophytic Vegetation			
% Bare Ground in Herb Stratum 85 % Cove	er of Biotic C	Crust				⊠ No [		
Remarks:								

Depth	cription: (Descri Matrix	,		Dag	dox Featur	20			
(inches)	Color (moist)	<u>%</u>	Colo	r (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-1									Duff
1-11	10YR 2/1	100						Muck	
11-16	10YR 5/2	90	1000	R 4/6	10		M	Silt	
11-10	101K 3/2	<u>90</u>	1011	K 4/0	10		<u>M</u>	SIIL	
					<del>_</del>				
	-								
							-		
									_
¹Type: C=C	oncentration, D=D	Depletion,	RM=Redu	uced Matrix, (	CS=Cover	ed or Coat	ed Sand G	rains. <sup>2</sup> L	_ocation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRRs	s, unless oth	erwise no	oted.)			ators for Problematic Hydric Soils³:
☐ Histosol	, ,			Sandy Redox					cm Muck (A10)
	oipedon (A2)			Stripped Matri	. ,	/			ed Parent Material (TF2)
☐ Black Hi	` '			oamy Mucky			MLRA 1))		ery Shallow Dark Surface (TF12)
_ , .	n Sulfide (A4) d Below Dark Surf	ace (Δ11)		oamy Gleyed epleted Matri		<u> </u>			her (Explain in Remarks
	ark Surface (A12)	acc (A11)		Redox Dark S	` ,	6)			
	Mucky Mineral (S1)	)	· <del></del>	epleted Dark	•	,		<sup>3</sup> Indica	ators of hydrophytic vegetation and
☐ Sandy G	Gleyed Matrix (S4)		□ F	Redox Depres	sions (F8)	)		we	tland hydrology must be present,
								un	less disturbed or problematic.
	Layer (if present	):							
Type:									
	ches):							Hydric S	oil Present? Yes ⊠ No □
Remarks:									
HYDROLO	GY								
Wetland Hy	drology Indicato	rs:							
Primary Indi	cators (minimum o	of one req	uired; che	ck all that ap	ply)			<u>Sec</u>	condary Indicators (2 or more required)
☐ Surface	e Water (A1)					aves (B9) (	except ML		☐ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
	/ater Table (A2)			☐ Salt Cru	ust (B11)				☐ Drainage Patterns (B10)
Saturar     Saturar	tion (A3)			☐ Aquatic	Invertebra	ates (B13)			☐ Dry-Season Water Table (C2)
☐ Water	Marks (B1)			☐ Hydrog		` '			☐ Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)				-		g Living Ro	oots (C3)	Geomorphic Position (D2)
	eposits (B3)			□ Presen	ce of Redu	road Iron /			Shallow Aguitard (D3)
						,	,		_ ' ' '
_	Mat or Crust (B4)			☐ Recent	Iron Redu	ction in Til	led Soils (C	,	FAC-Neutral Test (D5)
☐ Iron De	eposits (B5)			☐ Recent	Iron Redu I or Stress	iction in Tilled	,	<b>A</b> )	FAC-Neutral Test (D5) Raised Ant Mounds (D6(LRR A)
☐ Iron De	eposits (B5) e Soil Cracks (B6)		(57)	☐ Recent	Iron Redu I or Stress	ction in Til	led Soils (C	<b>A</b> )	FAC-Neutral Test (D5)
☐ Iron De☐ Surface☐ Inundat	eposits (B5) e Soil Cracks (B6) ion Visible on Aer	ial Imager		☐ Recent	Iron Redu I or Stress	iction in Tilled	led Soils (C	<b>A</b> )	FAC-Neutral Test (D5) Raised Ant Mounds (D6(LRR A)
☐ Iron De☐ Surface☐ Inundat☐ Sparsel	eposits (B5) e Soil Cracks (B6) ion Visible on Aer ly Vegetated Cond	ial Imager		☐ Recent	Iron Redu I or Stress	iction in Tilled	led Soils (C	<b>A</b> )	FAC-Neutral Test (D5) Raised Ant Mounds (D6(LRR A)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel Field Obser	eposits (B5) e Soil Cracks (B6) ion Visible on Aer by Vegetated Conditions:	ial Imager cave Surfa	ace (B8)	Recent Stunted Other (I	Iron Redu I or Stress Explain in	uction in Til ed Plants Remarks)	led Soils (C	<b>A</b> )	FAC-Neutral Test (D5) Raised Ant Mounds (D6(LRR A)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat	eposits (B5) e Soil Cracks (B6) ion Visible on Aer ly Vegetated Conditions: er Present?	ial Imager cave Surfa	No ⊠	Recent Stunted Other (I	Iron Redu I or Stress Explain in	uction in Til ed Plants Remarks)	led Soils (C	<b>A</b> )	FAC-Neutral Test (D5) Raised Ant Mounds (D6(LRR A)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table	eposits (B5) e Soil Cracks (B6) ion Visible on Aer ly Vegetated Conditions: ter Present? Present?	ial Imager cave Surfa Yes ☐ Yes ⊠	No ⊠	Recent Stunted Other (I	Iron Redu I or Stress Explain in es):es): 9	uction in Til ed Plants Remarks)	led Soils (CD1)(LRR A	A) .	☐ FAC-Neutral Test (D5) ☐ Raised Ant Mounds (D6(LRR A) ☐Frost-Heave Hummocks (D7)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P	eposits (B5) e Soil Cracks (B6) ion Visible on Aer ly Vegetated Conditions: ter Present? Present?	ial Imager cave Surfa	No ⊠	Recent Stunted Other (I	Iron Redu I or Stress Explain in es):es): 9	uction in Til ed Plants Remarks)	led Soils (CD1)(LRR A	A) .	FAC-Neutral Test (D5) Raised Ant Mounds (D6(LRR A)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	eposits (B5) e Soil Cracks (B6) ion Visible on Aer ly Vegetated Conditions: ter Present? Present?	ial Imager cave Surfa Yes ☐ Yes ⊠ Yes ⊠	No 🖂 No 🗆	Recent Stunted Other (I  Depth (inch Depth (inch	Iron Redu I or Stress Explain in es): es): 9 es): 0	action in Til ed Plants Remarks)	led Soils (CD1)(LRR A	land Hydrole	☐ FAC-Neutral Test (D5) ☐ Raised Ant Mounds (D6(LRR A) ☐Frost-Heave Hummocks (D7)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	eposits (B5) e Soil Cracks (B6) ion Visible on Aer ly Vegetated Cond evations: er Present? Present? eresent? pillary fringe)	ial Imager cave Surfa Yes ☐ Yes ⊠ Yes ⊠	No 🖂 No 🗆	Recent Stunted Other (I  Depth (inch Depth (inch	Iron Redu I or Stress Explain in es): es): 9 es): 0	action in Til ed Plants Remarks)	led Soils (CD1)(LRR A	land Hydrole	☐ FAC-Neutral Test (D5) ☐ Raised Ant Mounds (D6(LRR A) ☐Frost-Heave Hummocks (D7)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	eposits (B5) e Soil Cracks (B6) ion Visible on Aer ly Vegetated Cond evations: er Present? Present? eresent? pillary fringe)	ial Imager cave Surfa Yes ☐ Yes ⊠ Yes ⊠	No 🖂 No 🗆	Recent Stunted Other (I  Depth (inch Depth (inch	Iron Redu I or Stress Explain in es): es): 9 es): 0	action in Til ed Plants Remarks)	led Soils (CD1)(LRR A	land Hydrole	☐ FAC-Neutral Test (D5) ☐ Raised Ant Mounds (D6(LRR A) ☐Frost-Heave Hummocks (D7)
☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	eposits (B5) e Soil Cracks (B6) ion Visible on Aer ly Vegetated Cond evations: er Present? Present? eresent? pillary fringe)	ial Imager cave Surfa Yes ☐ Yes ⊠ Yes ⊠	No 🖂 No 🗆	Recent Stunted Other (I  Depth (inch Depth (inch	Iron Redu I or Stress Explain in es): es): 9 es): 0	action in Til ed Plants Remarks)	led Soils (CD1)(LRR A	land Hydrole	☐ FAC-Neutral Test (D5) ☐ Raised Ant Mounds (D6(LRR A) ☐Frost-Heave Hummocks (D7)

Project/Site: Weyerhaeuser		City/C	County	: Federal W	ay/King	Sampling Date:4	1/8/16
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point:	DI UPL1
Investigator(s): Richard Tveten				Section, Tov	wnship, Range: Section 16	i, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	f (concave,	convex, none): gentle slop	e Slo	pe (%): 3
Subregion (LRR): <u>LRR A</u>	Lat: 43.30	07767	7		Long: -122.297341	Datur	n: <u>NAD83</u>
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8							
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation No, Soil No, or Hydrology No significantly di	-				mstances" present? Yes	⊠ No □	
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.)		
		`		, ,	,		oturos oto
SUMMARY OF FINDINGS – Attach site map s	snowing	Saiii	ibiini	g ponitio	cations, transects,	important le	atures, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒			Is the	e Sampled	Area		
Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒			withi	in a Wetland	d? Yes ☐ No		
Remarks:							
<b>VEGETATION – Use scientific names of plant</b>	s.						
	Absolute			Indicator	Dominance Test worksh	neet:	
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Spe		(4)
1. Thuja plicata				FAC.	That Are OBL, FACW, or	FAC: 2	(A)
Acer macrophyllum     Suedotsuga menziesii	<u>40</u> <u>30</u>	Yes Yes		FACU FACU	Total Number of Dominar		(D)
4.	<u>50</u>	163		1 ACO	Species Across All Strata	n: <u>5</u>	(B)
	100	= To	otal Co	over	Percent of Dominant Spe That Are OBL, FACW, or		(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)						,	(A/D)
1. Rubus armeniacus	30	Yes		FAC	Prevalence Index works		
2.					Total % Cover of:		-
3.					OBL species		
5.		-			FAC species		
5.	30		otal Co	over	FACU species		
Herb Stratum (Plot size: 5ft)	<u>00</u>		olai Ol	3701	UPL species		
1. Rubus ursinus	20	Yes		<u>FACU</u>	Column Totals:		(B)
2					Daniela a a la dan	D/A	
3.					Prevalence Index = Hydrophytic Vegetation		<del></del>
4.					Dominance Test is >5		
5		-			☐ Prevalence Index is ≤		
7.					☐ Morphological Adapta		supporting
8.		-			data in Remarks of	or on a separate	sheet)
	20	= To	otal Co	over	☐ Problematic Hydrophy	ytic Vegetation <sup>1</sup>	(Explain)
Woody Vine Stratum (Plot size: 15ft)					Almatia a cara a filosofica a a tra	and and band	
1.					<sup>1</sup> Indicators of hydric soil a be present, unless disturb		
2					Hydrophytic		
			otal Co	Jvei	Vegetation		
	er of Biotic C	Crust	0		Present? Yes	□ No ⊠	
Remarks:							

	cription: (Describ		aeptn nee				or contirn	n the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color	(moist)	ox Feature: %	S Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-1									Duff
1-9	10YR 3/2	100	<u> </u>					Sandy loam	
9-16	10YR 3/3	100							gravelly
9-10	101K 3/3	100	<u> </u>					Sandy Idam	graveny
¹Type: C=C	oncentration, D=De	epletion,	RM=Redu	ced Matrix, C	S=Covered	d or Coate	ed Sand G	rains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to	all LRRs	, unless othe	erwise not	ed.)			ors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	, ,			andy Redox (					n Muck (A10)
	pipedon (A2)			tripped Matrix	, ,				Parent Material (TF2)
☐ Black His	` '			oamy Mucky		(except	MLRA 1))	-	/ Shallow Dark Surface (TF12)
_ , ,	n Sulfide (A4) d Below Dark Surfa	co (A11)		pamy Gleyed epleted Matrix				☐ Otne	r (Explain in Remarks
	ark Surface (A12)	ice (ATT)		edox Dark Su	` '				
	lucky Mineral (S1)			epleted Dark		7)		<sup>3</sup> Indicate	ors of hydrophytic vegetation and
	leyed Matrix (S4)			edox Depres		,			and hydrology must be present,
								unles	ss disturbed or problematic.
Restrictive	Layer (if present):	1							
Type:									
Depth (in	ches):							Hydric Soil	Present? Yes 🗌 No 🖂
Remarks: No	o hydric soil indicat	ors							
HYDROLO	GY								
	drology Indicator	s:							
	cators (minimum of		uired: che	ck all that apr	olv)			Seco	ndary Indicators (2 or more required)
	e Water (A1)	0.10 .04	<u></u>	☐ Water-St		es (B9) (	except ML		Water Stained Leaves (B9) (MLRA 1, 2,
	,			4A, and 4B		( -) (			A, and 4B))
_ •	ater Table (A2)			☐ Salt Cru	st (B11)				. ,
☐ Saturat	tion (A3)			☐ Aquatic	Invertebrat	es (B13)			Dry-Season Water Table (C2)
☐ Water I	` ,			☐ Hydroge		, ,			Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)			Oxidized			_	oots (C3)	Geomorphic Position (D2)
	eposits (B3)			Presence					Shallow Aquitard (D3)
_	fat or Crust (B4)			Recent			,	· —	· /
	eposits (B5)				or Stressed	•	)(LKK #	•	Raised Ant Mounds (D6( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
	e Soil Cracks (B6)	. 1 1	(DZ)	☐ Other (E	xplain in R	emarks)			Flost-neave nullillocks (D7)
	ion Visible on Aeria	-							
-	y Vegetated Conca	ave Suria	ce (B8)						
Field Obser		V □	Na 🔽	Danth (in ab.					
Surface Wat		Yes □	No ⊠	Depth (inche					
Water Table		Yes 🗌	No ⊠	Depth (inche			14/-41		
Saturation P (includes car		Yes 🗌	No 🛚	Depth (inche	es):		weti	iana Hyarolog	y Present? Yes ☐ No ⊠
					nhotoo nr	ovious inc	nactiona)	if available:	
	corded Data (strea	m gauge	, monitorir	ng well, aerial	priotos, pri	evious iris	pections),	ii availabic.	
		m gauge	, monitorir	ng well, aerial	priotos, pri	evious iris	pections),	ii availabic.	
Describe Re					priotos, pri	evious iris	pections),	ii availabic.	
Describe Re	corded Data (strea				priotos, pri	evious iris	pections),	ii available.	

Project/Site: Weyerhaeuser	(	City/C	County	: <u>Federal W</u>	/ay/King	Sampling	g Date: <u>4/8/16</u>	
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling	g Point: <u>DI-WE</u>	<u>:</u> T1
Investigator(s): Richard Tveten			;	Section, To	wnship, Range: Section 16	6, T21N, I	R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	f (concave,	convex, none): Concave		Slope (%)	: <u>5</u>
Subregion (LRR): <u>LRR A</u>								
Soil Map Unit Name: <u>Alderwood gravelly sandy loam, 0 to 8</u>								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation No, Soil No, or Hydrology No significantly di	•			,	imstances" present? Yes	⊠ No	П	
					any answers in Remarks.)			
Are Vegetation No, Soil No, or Hydrology No naturally proble		`		•	•	•		
SUMMARY OF FINDINGS – Attach site map s	showing	sam	pling	g point lo	ocations, transects,	import	ant feature	s, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □			Is the	e Sampled	Area			
Hydric Soil Present? Yes ⊠ No □				n a Wetlan		) [		
Wetland Hydrology Present? Yes ⊠ No □					_			
Remarks:								
VECETATION . Her exicutific names of plant								
VEGETATION – Use scientific names of plant		D		la di satan	Daminanaa Taat washal	h a a 4 :		
Tree Stratum (Plot size: 30ft)	Absolute % Cover				Dominance Test works			
1. None					Number of Dominant Spe That Are OBL, FACW, or		2	(A)
2.					Total Number of Demine			
3.					Total Number of Dominar Species Across All Strata		2	(B)
4.								` '
	0				Percent of Dominant Spe That Are OBL, FACW, or		100	(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)								
1. Rubus spectabilis	30	<u>Y</u>		<u>FAC</u>	Prevalence Index works		Marileon I. da	
2.					Total % Cover of:			
3.					OBL species			
4					FACW species			
5		_	-1-1-0		FACULOROGICS			
Herb Stratum (Plot size: 5ft)	30	= 10	otal Co	over	FACU species UPL species			
1. Carex deweyana	15	Y		FAC	Column Totals:			
2.					Column Totals.	(^)		_ (b)
3.					Prevalence Index =	= B/A = _		
4.					Hydrophytic Vegetation	Indicato	ors:	
5.					□ Dominance Test is > !	50%		
6.					☐ Prevalence Index is ≤	≦3.0¹		
7.					☐ Morphological Adapta			
8.					data in Remarks			
	<u>15</u>	= To	otal Co	over	☐ Problematic Hydroph	ytic Vege	etation' (Explai	in)
Woody Vine Stratum (Plot size: <u>15ft</u> )								
1. None					<sup>1</sup> Indicators of hydric soil a be present, unless disturb			must
2.		_			Livelnembysie			
	0	= 10	otal Co	over	Hydrophytic Vegetation			
% Bare Ground in Herb Stratum 85 % Cove	er of Biotic C	Crust				⊠ No		
Remarks:								

Profile Desc Depth	Matrix			Rade	ox Feature	S				
(inches)	Color (moist)	%	Colo	r (moist)	<u>%</u>		Loc <sup>2</sup>	Texture	Remarks	
0-1									Duff	
1-11	10YR 2/1	100						Muck		
11-16	10YR 5/2	90	107	R 4/6	10	C	M	Silt		
11-10	1011(3/2							Oiit		
							-		_	
	oncentration, D=D			•			ed Sand G		Location: PL=Pore Lining, M=Matrix.	
-	Indicators: (App	licable to				ed.)			ators for Problematic Hydric Soils <sup>3</sup> :	
☐ Histosol	` '			Sandy Redox (					cm Muck (A10)	
☐ Black His	pipedon (A2)			Stripped Matrix _oamy Mucky N	` '	1 (excent	MI RA 1))		d Parent Material (TF2) ery Shallow Dark Surface (TF12)	
<del></del>	n Sulfide (A4)			oamy Gleyed I			MERCA 1))		ner (Explain in Remarks	
	Below Dark Surfa	ce (A11)		epleted Matrix	, ,					
☐ Thick Da	ark Surface (A12)		□ F	Redox Dark Su	ırface (F6)					
	lucky Mineral (S1)			Depleted Dark		7)			ators of hydrophytic vegetation and	
☐ Sandy G	leyed Matrix (S4)		☐ F	Redox Depress	sions (F8)				tland hydrology must be present,	
Daatuiativa	Laver (if weepent)	_						uni	ess disturbed or problematic.	
	Layer (if present)									
	ah a a \.							Huddin C	oil Dunnaunt2 Van ⊠ Na □	
									oil Present? Yes ⊠ No □	
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicator									
Wetland Hy			uired; che		•				condary Indicators (2 or more required)	
Wetland Hy	drology Indicator		uired; che	eck all that app  Water-Stand 4B)	ained Lea	ves (B9) (	except ML	RA 1, 2,	condary Indicators (2 or more required)  Water Stained Leaves (B9) (MLRA 1, 2	
Wetland Hy  Primary India  ☐ Surface  ☐ High W	drology Indicator cators (minimum o e Water (A1) /ater Table (A2)		uired; che	☐ Water-Sta	ained Leav	ves (B9) (	except ML	RA 1, 2, [	☐ Water Stained Leaves (B9) (MLRA 1, 24A, and 4B)) ☐ Drainage Patterns (B10)	
Wetland Hy Primary India ☐ Surface ☐ High W	drology Indicator cators (minimum o e Water (A1)		uired; che	☐ Water-Sta	ained Leav		except ML	RA 1, 2, [	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))	
Wetland Hy Primary India ☐ Surface ☐ High W	drology Indicator cators (minimum o e Water (A1) dater Table (A2) tion (A3)		uired; che	☐ Water-Sta 4A, and 4B) ☐ Salt Crus	ained Leavest (B11)	tes (B13)		RA 1, 2, [	☐ Water Stained Leaves (B9) (MLRA 1, 24A, and 4B)) ☐ Drainage Patterns (B10)	
Wetland Hyder Primary India  □ Surface  □ High W □ Saturat □ Water I □ Sedime	drology Indicator cators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		uired; che	Water-St. 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized	ained Leavent (B11) Invertebraten Sulfide (I Rhizosph	tes (B13) Odor (C1) ieres alon	g Living Ro	RA 1, 2, [	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C	
Wetland Hyder Primary India  □ Surface  □ High W  □ Saturat  □ Water I  □ Sedime □ Drift De	drology Indicator cators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		uired; che	Water-St. 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence	ained Leavante (B11) Invertebration Sulfide (I Rhizosphero of Reduce	tes (B13) Odor (C1) eres alon ced Iron (0	g Living Ro	RA 1, 2, [	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))      Drainage Patterns (B10)      Dry-Season Water Table (C2)      Saturation Visible on Aerial Imagery (C      Geomorphic Position (D2)      Shallow Aquitard (D3)	
Wetland Hy  Primary India  □ Surface  □ High W  □ Saturat  □ Water I  □ Sedime  □ Drift De  □ Algal M	drology Indicator cators (minimum of e Water (A1) dater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4)		uired; che	Water-St. 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence	ained Lear st (B11) Invertebrate n Sulfide ( I Rhizosph e of Reduction Reduction	tes (B13) Odor (C1) teres alon ced Iron (tetion in Til	g Living Ro C4) led Soils (C	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C  □ Geomorphic Position (D2)  □ Shallow Aquitard (D3)  □ FAC-Neutral Test (D5)	
Wetland Hy Primary India  □ Surface  □ High W □ Saturat □ Water I □ Sedime □ Drift De □ Algal W □ Iron De	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5)		uired; che	Water-St. 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted	ained Leaverst (B11) Invertebrate In Sulfide (Interprete to the second s	tes (B13) Odor (C1) heres alon ced Iron (C tion in Til d Plants (	g Living Ro	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6(LRR A)	
Wetland Hydelic Primary India  Surface  High W Saturat Water I Sedime Drift De Algal M Iron De Surface	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6)	f one requ		Water-St. 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted	ained Lear st (B11) Invertebrate n Sulfide ( I Rhizosph e of Reduction Reduction	tes (B13) Odor (C1) heres alon ced Iron (C tion in Til d Plants (	g Living Ro C4) led Soils (C	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C  □ Geomorphic Position (D2)  □ Shallow Aquitard (D3)  □ FAC-Neutral Test (D5)	
Wetland Hyder Primary India Surface High W Saturat Water I Sedime Drift De Algal M Iron De Surface	drology Indicator cators (minimum o e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric	f one requ	y (B7)	Water-St. 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted	ained Leaverst (B11) Invertebrate In Sulfide (Interprete to the second s	tes (B13) Odor (C1) heres alon ced Iron (C tion in Til d Plants (	g Living Ro C4) led Soils (C	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6(LRR A)	
Wetland Hy Primary India Surface High W Saturat Water I Sedime Drift De Algal M Iron De Surface Inundat Sparsel	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric y Vegetated Conc	f one requ	y (B7)	Water-St. 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted	ained Leaverst (B11) Invertebrate In Sulfide (Interprete to the second s	tes (B13) Odor (C1) heres alon ced Iron (C tion in Til d Plants (	g Living Ro C4) led Soils (C	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6(LRR A)	
Wetland Hy Primary India Surface High W Saturat Water I Sedime Drift De Iron De Surface Inundat Sparsel	drology Indicator cators (minimum of the Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy vations:	f one requ al Imager ave Surfa	y (B7) ce (B8)	Water-St. 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	ained Leavained Leavan Sulfide ( I Rhizosphe of Reduction Reduction Stresse xplain in F	tes (B13) Odor (C1) peres alon ced Iron (C tion in Til d Plants ( Remarks)	g Living Ro C4) led Soils (C	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6(LRR A)	
Wetland Hydelian Primary India    Surface     High W     Saturat     Water I     Sedime     Drift Delian     Iron Delian     Surface     Inundat     Sparsel     Sparsel	drology Indicator cators (minimum of the Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric y Vegetated Concevations: er Present?	al Imager ave Surfa Yes □	y (B7) ce (B8)	Water-St: 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	ained Leavest (B11) Invertebrate Sulfide (B1 Rhizospheror Reduction Reduction Stresse xplain in Fass):	tes (B13) Odor (C1) peres alon ced Iron (C tion in Til d Plants ( Remarks)	g Living Ro C4) led Soils (C	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6(LRR A)	
Primary India  Surface  High W Saturat  Water I Sedime Drift De Algal M Iron De Surface Inundat Sparsel  Field Obser Surface Water Table	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric y Vegetated Concevations: er Present? Present?	al Imager ave Surfa Yes □ Yes ⊠	y (B7) ce (B8) No 🖂	Water-State, and 4B) Salt Crusty Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	ained Leavest (B11) Invertebrate Sulfide (B1) Invertebrate Sulfide (B1	tes (B13) Odor (C1) peres alon ced Iron (C tion in Til d Plants ( Remarks)	g Living Ro C4) led Soils (C D1)( <b>LRR</b> A	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C  □ Geomorphic Position (D2)  □ Shallow Aquitard (D3)  □ FAC-Neutral Test (D5)  □ Raised Ant Mounds (D6(LRR A))  □ Frost-Heave Hummocks (D7)	
Wetland Hydelian Primary India    Surface     High W     Saturat     Sedime     Drift De     Algal M     Iron De     Surface     Inundat     Sparsel     Field Obser     Surface Wat     Water Table     Saturation P	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric y Vegetated Concevations: er Present? Present?	al Imager ave Surfa Yes □	y (B7) ce (B8)	Water-St: 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	ained Leavest (B11) Invertebrate Sulfide (B1) Invertebrate Sulfide (B1	tes (B13) Odor (C1) peres alon ced Iron (C tion in Til d Plants ( Remarks)	g Living Ro C4) led Soils (C D1)( <b>LRR</b> A	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6(LRR A)	
Wetland Hyder Primary India    Surface     High W     Saturate     Water I     Sedime     Drift De     Algal M     Iron De     Surface     Inundate     Sparsel     Field Obser     Surface Water Table     Saturation P     (includes cap	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric y Vegetated Concevations: er Present? Present?	al Imager ave Surfa Yes ☐ Yes ☒ Yes ☒	y (B7) ce (B8)  No  No  No  No  No  No  No  No  No  No	Water-St: 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	ained Leavest (B11) Invertebrate Sulfide (B1) Invertebrate Sulfide (B1	tes (B13) Odor (C1) heres alon ced Iron (Cation in Til and Plants (Remarks)	g Living Ro C4) led Soils (0 D1)(LRR A	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C  □ Geomorphic Position (D2)  □ Shallow Aquitard (D3)  □ FAC-Neutral Test (D5)  □ Raised Ant Mounds (D6(LRR A))  □ Frost-Heave Hummocks (D7)	
Wetland Hyder Primary India    Surface     High W     Saturate     Water I     Sedime     Drift De     Algal M     Iron De     Surface     Inundate     Sparsel     Field Obser     Surface Water Table     Saturation P     (includes cap	drology Indicator cators (minimum of the Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy y Vegetated Concevations: er Present? Present? resent?	al Imager ave Surfa Yes ☐ Yes ☒ Yes ☒	y (B7) ce (B8)  No  No  No  No  No  No  No  No  No  No	Water-St: 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	ained Leavest (B11) Invertebrate Sulfide (B1) Invertebrate Sulfide (B1	tes (B13) Odor (C1) heres alon ced Iron (Cation in Til and Plants (Remarks)	g Living Ro C4) led Soils (0 D1)(LRR A	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C  □ Geomorphic Position (D2)  □ Shallow Aquitard (D3)  □ FAC-Neutral Test (D5)  □ Raised Ant Mounds (D6(LRR A))  □ Frost-Heave Hummocks (D7)	
Wetland Hyder Primary India    Surface     High W     Saturate     Water I     Sedime     Drift De     Algal M     Iron De     Surface     Inundate     Sparsel     Field Obser     Surface Water Table     Saturation P     (includes cap	drology Indicator cators (minimum of the Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy y Vegetated Concevations: er Present? Present? resent?	al Imager ave Surfa Yes ☐ Yes ☒ Yes ☒	y (B7) ce (B8)  No  No  No  No  No  No  No  No  No  No	Water-St: 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	ained Leavest (B11) Invertebrate Sulfide (B1) Invertebrate Sulfide (B1	tes (B13) Odor (C1) heres alon ced Iron (Cation in Til and Plants (Remarks)	g Living Ro C4) led Soils (0 D1)(LRR A	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C  □ Geomorphic Position (D2)  □ Shallow Aquitard (D3)  □ FAC-Neutral Test (D5)  □ Raised Ant Mounds (D6(LRR A))  □ Frost-Heave Hummocks (D7)	
Wetland Hy Primary India Surface High W Saturat Sedime Drift De Surface Iron De Surface Inundat Sparsel Field Obser Surface Wat Water Table Saturation P (includes cap	drology Indicator cators (minimum of the Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy y Vegetated Concevations: er Present? Present? resent?	al Imager ave Surfa Yes ☐ Yes ☒ Yes ☒	y (B7) ce (B8)  No  No  No  No  No  No  No  No  No  No	Water-St: 4A, and 4B) Salt Crus Aquatic I Hydroge Oxidized Presence Recent I Stunted Other (E	ained Leavest (B11) Invertebrate Sulfide (B1) Invertebrate Sulfide (B1	tes (B13) Odor (C1) heres alon ced Iron (Cation in Til and Plants (Remarks)	g Living Ro C4) led Soils (0 D1)(LRR A	RA 1, 2, [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	Water Stained Leaves (B9) (MLRA 1, 24A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C  □ Geomorphic Position (D2)  □ Shallow Aquitard (D3)  □ FAC-Neutral Test (D5)  □ Raised Ant Mounds (D6(LRR A))  □ Frost-Heave Hummocks (D7)	

Project/Site: Weyerhaeuser		City/Co	unty: <u>Federal V</u>	Vay/King	Sampling Date:4/9/	′16
Applicant/Owner: Federal Way Campus, LLC				State: WA	Sampling Point: DJ	-UPL1
Investigator(s): Richard Tveten			Section, To	wnship, Range: Section	n 16, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Local	relief (concave,	convex, none):	Slope	(%): <u>3</u>
Subregion (LRR): <u>LRR A</u>	Lat: 47.3	07429		Long: -122.297907	Datum:	NAD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8						
Are climatic / hydrologic conditions on the site typical for thi	•					
Are Vegetation No, Soil Yes, or Hydrology No significantly	•		,	cumstances" present?	•	
Are Vegetation No, Soil No, or Hydrology No naturally prob				any answers in Remar		
		,		•	•	uros oto
SUMMARY OF FINDINGS – Attach site map	Showing	Samp	ing point i	ocalions, transect	.s, important lead	ures, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒		ls	s the Sampled	Area		
Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒		v	vithin a Wetlar	nd? Yes □	No ⊠	
Remarks: Soils graded at somepoint in the past.						
Nomano. Como grados de comoponie in the past.						
VEGETATION – Use scientific names of plan	ıts.					
	Absolute		ant Indicator	Dominance Test wor	rksheet:	
Tree Stratum (Plot size: 30ft)			es? Status	Number of Dominant		
1. Abies grandis				That Are OBL, FACW	/, or FAC: 0	(A)
2. Fraxinus excelsior		Yes Vac		Total Number of Dom		(5)
3. Acer macrophyllum		Yes	<u>FACU</u>	Species Across All St	rata: <u>7</u>	(B)
4.	100	= Tota	al Cover	Percent of Dominant		(A /D)
Sapling/Shrub Stratum (Plot size: 15ft)	100	- 100	ai 00v0i	That Are OBL, FACW	/, or FAC: 0	(A/B)
Oemleria cerasiformis	20	Yes	<u>FACU</u>	Prevalence Index wo		
2					: Multiply b	
3.					x 1 =	
4		-			x 2 = x 3 =	
5	20	_ Tota	al Cover		x 4 =	
Herb Stratum (Plot size: 5ft)	20	= 1016	ai Covei		x 5 =	
Polystichum munitum	20	Yes	<u>FACU</u>	Column Totals:		
2. Dicentra formosa	30	Yes	<u>FACU</u>			
3. Rubus ursinus	<u>20</u>	Yes	<u>FACU</u>		ex = B/A =	_
4.				Hydrophytic Vegetat  ☐ Dominance Test is		
5				☐ Prevalence Index		
6				<del>-</del>	aptations¹ (Provide sur	porting
8.					rks or on a separate sh	
	70	= Tota	al Cover	☐ Problematic Hydro	ophytic Vegetation <sup>1</sup> (Ex	(plain)
Woody Vine Stratum (Plot size: 15ft)	<del></del>	. 510	·			
1. None					oil and wetland hydrolo sturbed or problematic.	gy must
2.				,	station of problematic.	
	0	= Tota	al Cover	Hydrophytic Vegetation		
<u> </u>	er of Biotic (			Present? Y	′es 🗌 No 🛚	
Remarks: F. excelsior (European ash) is not listed in the U	JS, but it is r	ecogniz	ed as a wetlan	d tree in its home territo	ory.	

Depth	cription: (Describ Matrix	e to the d	eptn nee		cument the industries		or contirn	n the absence	e or indicators.)
(inches)	Color (moist)	%	Color	(moist)	<u>%</u>	_Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-16	10YR 3/3	100	· ·					Gravelly loan	n
		_	-						
	oncentration, D=De						ed Sand G		cation: PL=Pore Lining, M=Matrix.
-	Indicators: (Appl	icable to a				ed.)			ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	, ,			indy Redox				<del></del>	n Muck (A10)
☐ Histic Ep	pipedon (A2)			ripped Mati	` '	/avaant	MI DA 4\\		Parent Material (TF2)
	n Sulfide (A4)				y Mineral (F1 d Matrix (F2)	(except	WILKA 1))		y Shallow Dark Surface (TF12) er (Explain in Remarks
	d Below Dark Surfa	ce (A11)		pleted Mati	, ,				(Explain in Nemarks
	ark Surface (A12)	00 (/ (/ / /	_	•	Surface (F6)				
	lucky Mineral (S1)				k Surface (F	7)		3Indicate	ors of hydrophytic vegetation and
☐ Sandy G	leyed Matrix (S4)		☐ Re	dox Depre	ssions (F8)			wetla	and hydrology must be present,
								unles	ss disturbed or problematic.
Restrictive	Layer (if present):								
Type:			_						
Depth (in	ches):		_					Hydric Soil	l Present? Yes □ No ⊠
Remarks: No	o hydric soil indicat	ors							
HYDROLO	GY								
Wetland Hy	drology Indicators	s:							
Primary Indi	cators (minimum of	one requi	red; chec	k all that ap	oply)			<u>Seco</u>	ndary Indicators (2 or more required)
☐ Surface	e Water (A1)				Stained Leav	es (B9) (	except ML		Water Stained Leaves (B9) (MLRA 1, 2,
	(-1 T-bl- (AQ)			4A, and 4	,			4.6	A, and 4B))
	ater Table (A2)			Salt Cı		(D40)			Drainage Patterns (B10)
	tion (A3)				c Invertebrate	, ,			Dry-Season Water Table (C2)
	Marks (B1) ent Deposits (B2)				gen Sulfide C			Lacto (C3)	Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
	. ,				ed Rhizosphe		_		Shallow Aquitard (D3)
	eposits (B3) lat or Crust (B4)				nce of Reduc t Iron Reduct			∟ اعد	FAC-Neutral Test (D5)
	eposits (B5)				d or Stressed		,	· _	Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)				(Explain in R		(DI)( <b>LKK F</b>		Frost-Heave Hummocks (D7)
_	, ,		(DT)	☐ Other	(Explain in K	emaiks)			Ji Tost-Heave Huminocks (DT)
	ion Visible on Aeria	• •	` '						
· · · · · · · · · · · · · · · · · · ·	y Vegetated Conca	ave Surrac	e (B8)				1		
Field Obser		·		<b>5</b> 4 6 1	,				
Surface Wat					nes):				
Water Table					nes):				
Saturation P		Yes 🗌	No 🛛	Depth (incl	nes):		Wetl	land Hydrolog	gy Present? Yes ☐ No ⊠
(includes cap Describe Re	corded Data (strea	m gauge,	monitorin	g well, aeri	al photos, pre	evious in	spections),	if available:	
	•	- <del>-</del> ·					,.		
Remarks: No	o wetland hydrolog	y indicator	s						
	,	-							

Project/Site: Weyerhaeuser		City/C	County	/: <u>Federal W</u>	/ay/King	Sampling Date:4/6	5/16
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: D.	J-WET1
Investigator(s): Richard Tveten				Section, To	wnship, Range: Section	16, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	ef (concave,	convex, none): concave	Slope	(%): <u>0</u>
Subregion (LRR): <u>LRR A</u>	Lat: <u>47.3</u>	07429	9		Long: -122.297907	Datum:	NAD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8							
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Y	es 🏻	No □ (If	f no, explain in Remarks.	)	_
Are Vegetation No, Soil Yes, or Hydrology No significantly	-				umstances" present? Y		
Are Vegetation No, Soil No, or Hydrology NO naturally prob					n any answers in Remarl		
SUMMARY OF FINDINGS – Attach site map					-		ures, etc.
				<u> </u>	,	•	
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐				e Sampled		_	
Wetland Hydrology Present? Yes ⊠ No □			with	in a Wetlan	ıd? Yes ⊠	No 🗌	
Remarks:		I					
<b>VEGETATION – Use scientific names of plan</b>	ts.						
Taga Charles (Diet size, 20th)	Absolute			Indicator	Dominance Test wor	ksheet:	
Tree Stratum (Plot size: 30ft)  1. Populus balsamifera	<u>% Cover</u> 50				Number of Dominant S That Are OBL, FACW,		(A)
Fraxinus excelsior							(/\)
3.					Total Number of Domin Species Across All Stra		(B)
4.					·		(=)
	100		otal C		Percent of Dominant S That Are OBL, FACW,		(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)					Prevalence Index wo		
1. None						Multiply b	W.
2. 3.					OBL species		-
4.					FACW species		
5.					FAC species		
	0				FACU species	x 4 =	
Herb Stratum (Plot size: 5ft)					UPL species		
1. Carex deweyana	<u>10</u>	Yes		FAC	Column Totals:	(A)	(B)
2					Prevalence Index	x = B/A = 3	
4.					Hydrophytic Vegetati		
5.					□ Dominance Test is		
6.					☐ Prevalence Index i	is ≤3.0¹	
7						aptations <sup>1</sup> (Provide su	
8.					data in Remark  Problematic Hydro	ks or on a separate sh	,
Moody Vino Ctratum (Distrator 45%)	10	= To	otal C	over	— Froblematic пудго	priytic vegetation (E.	λριαιι <i>ι)</i>
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric so	oil and wetland hydrol	oav must
1. None					be present, unless dist		
	0	= To	otal C	over	Hydrophytic		
0/ Para Cround in Harb Strature 22				-	Vegetation Present? Yes	es⊠ No □	
% Bare Ground in Herb Stratum 90 % Cov Remarks: F. excelsior (European ash) is recognized as a	er of Biotic (			territory l			
Total as a	Juana uee	iii ito		, torritory. I	t is not noted in the OO.		

Profile Des	cription: (Describ	e to the d	epth ne	eded to docur	nent the	indicator	or confir	m the absence	e of indicators.)
Depth	Matrix				x Feature				
(inches)	Color (moist)	%	Colo	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-8</u>	10YR 2/2	100			_			Mucky loam	
<u>8-12</u>	10YR 2/1	100						Mucky loam	· -
12-16	10YR 6/2	80	<u> 10YF</u>	R 5/6	20	<u>C</u>	M	Gravel sand	Redox features prominent
	-				-			-	-
			-		_				• -
					_				
	oncentration, D=D						ed Sand G		ocation: PL=Pore Lining, M=Matrix.
	Indicators: (App	licable to				ed.)			ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	` '			Sandy Redox (S					m Muck (A10)
☐ Histic Ep☐ Black Hi	oipedon (A2)			Stripped Matrix Loamy Mucky M	. ,	1 (ovcont	MI DA 1\\		Parent Material (TF2) y Shallow Dark Surface (TF12)
	en Sulfide (A4)			oamy Gleyed M			WILKA I))		er (Explain in Remarks
_ , .	d Below Dark Surfa	ace (A11)		epleted Matrix		•			cr (Explain in Nomano
	ark Surface (A12)	200 (711.)		Redox Dark Sur					
	Mucky Mineral (S1)			Depleted Dark S	Surface (F	7)		<sup>3</sup> Indicat	tors of hydrophytic vegetation and
☐ Sandy G	Gleyed Matrix (S4)		□ F	Redox Depressi	ions (F8)			wetl	and hydrology must be present,
								unle	ss disturbed or problematic.
	Layer (if present)								
Depth (in	ches):		_					Hydric So	il Present? Yes ⊠ No □
Remarks:									
HYDROLO	GY								
	drology Indicator	·s·							
_	cators (minimum o		red: che	eck all that appl	v)			Seco	ondary Indicators (2 or more required)
	e Water (A1)	one requi	rou, one	U Water-Sta		/es (R9) (	excent MI		Water Stained Leaves (B9) (MLRA 1,
Ganao	o maior (m)			4A, and 4B)		(20) (	олоор:		A, and 4B))
	/ater Table (A2)			☐ Salt Crus	t (B11)				Drainage Patterns (B10)
	tion (A3)			☐ Aquatic Ir	nvertebrat	tes (B13)			Dry-Season Water Table (C2)
☐ Water	Marks (B1)			☐ Hydroger	Sulfide (	Odor (C1)			Saturation Visible on Aerial Imagery (
☐ Sedim	ent Deposits (B2)			☐ Oxidized	Rhizosph	eres alon	g Living R	oots (C3)	Geomorphic Position (D2)
	eposits (B3)			Presence					- ' ' '
_	Mat or Crust (B4)						led Soils (	,	FAC-Neutral Test (D5)
	eposits (B5)						(D1)( <b>LRR</b> )		Raised Ant Mounds (D6(LRR A)
☐ Surfac	e Soil Cracks (B6)			☐ Other (Ex	cplain in R	Remarks)		L	Frost-Heave Hummocks (D7)
	tion Visible on Aeri		` '						
	ly Vegetated Conc	ave Surfac	e (B8)						
Field Obser	vations:								
Surface Wat	ter Present?	Yes 🗌	No 🛚	Depth (inches	s):				
Water Table	Present?	Yes 🛚	No 🗌	Depth (inches	s): <u>5</u>				
Saturation F		Yes 🛚	No 🗌	Depth (inches	s): <u>0</u>		Wet	land Hydrolog	gy Present? Yes ⊠ No 🗌
	pillary fringe) ecorded Data (strea	am daude	monitor	ing well aerial	nhotos ni	revious in	spections)	if available:	
2 3301130 110	23.404 2444 (01106	gaago,						,	
Remarks:									
Acmand.									

Project/Site: Weyerhaeuser	(	City/C	County:	Federal W	ay/King	Sampling Date: 4/9/16	j	
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: EI-UPL1		
Investigator(s): Richard Tveten			5	Section, Tov	vnship, Range: Section 16	i, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief	(concave,	convex, none): None	Slope (%	o): <u>1</u>	
Subregion (LRR): LRR A	_ Lat: <u>47.30</u>	09559	9		Long: <u>-122.298034</u>	Datum: NA	\D83	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slop	oes			NWI classificati	on: None		
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	es 🛛	No ☐ (If	no, explain in Remarks.)			
Are Vegetation No, Soil No, or Hydrology No significantly di	sturbed?	A	Are "No	ormal Circui	mstances" present? Yes	⊠ No □		
Are Vegetation No, Soil No, or Hydrology No naturally proble	ematic?	(It	f neede	ed, explain	any answers in Remarks.)	ı		
SUMMARY OF FINDINGS - Attach site map s	showing	sam	pling	point lo	cations, transects, i	important featur	es, etc.	
Hydrophytic Vegetation Present? Yes ☐ No ☒			1- 41	0	A			
Hydric Soil Present? Yes ☐ No ☒				Sampled . n a Wetland	_	. M		
Wetland Hydrology Present? Yes ☐ No ☒			within	Ta Wellan	163   160			
Remarks:								
VEGETATION – Use scientific names of plant	· e							
VEGETATION – Ose scientific fiames of plant		Dom	inant	Indicator	Dominance Test worksh	neet:		
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Spe			
Pseudotsuga menziesii	90	<u>Y</u>		FACU_	That Are OBL, FACW, or	FAC: 0	(A)	
2.					Total Number of Dominar			
3.					Species Across All Strata	n: <u>5</u>	(B)	
4	90				Percent of Dominant Spe		(4 (5)	
Sapling/Shrub Stratum (Plot size: 15ft)	90	= 10	olai Co	ivei	That Are OBL, FACW, or	FAC: <u>0</u>	(A/B)	
1. Sambucus racemosa	<u>15</u>	<u>Y</u>		FACU_	Prevalence Index works	heet:		
2						Multiply by:		
3.					OBL species			
5.	<u> </u>				FACW species FAC species			
5.	15				FACU species			
Herb Stratum (Plot size: 5ft)	10		olai oo		UPL species			
1. Polystichum munitum	<u>15</u>			FACU_	Column Totals:			
2. Rubus ursinus		<u>Y</u>		FACU_	Prevalence Index =	- P/A - 4		
3. Galium aparine					Hydrophytic Vegetation			
5.					☐ Dominance Test is >5			
6.					Prevalence Index is ≤	€3.0 <sup>1</sup>		
7.					☐ Morphological Adapta			
8						or on a separate shee	•	
Manda Vina Chatana (Diet sina 45th)	65	= To	otal Co	ver	☐ Problematic Hydrophy	ytic vegetation (Expir	airi)	
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil a	and wetland hydrology	/ must	
1. None					be present, unless disturb	ped or problematic.		
	0	= To	otal Co	ver	Hydrophytic			
% Bare Ground in Herb Stratum 0- moss % Cove	er of Biotic C	Cruet (	0		Vegetation Present? Yes	□ No ⊠		
Remarks:	, or blotte (	Jiuat <u>(</u>			100			

Color (moist)
1-4
dam gravelly
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.    Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.   Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)   Indicators for Problematic Hydric Soils³:   Indicators for Problematic Hydric Soils*:   Indicators for Problematic
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosol (A1)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosol (A1)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosol (A1)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosol (A1)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosol (A1)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosol (A1)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Histosol (A1)
Histosol (A1)
Histic Epipedon (A2)
Black Histic (A3) Loamy Mucky Mineral (F1 (except MLRA 1)) Very Shallow Dark Surface (TF12)   Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks   Depleted Below Dark Surface (A11) Depleted Matrix (F3) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.   Sandy Gleyed Matrix (S4) Redox Depressions (F8) Wetland hydrology must be present, unless disturbed or problematic.    Restrictive Layer (if present):  Type:  Depth (inches):  Remarks: No hyrics soil indicators    Hydric Soil Present? Yes   No   No   No   No   No   No   No   N
□ Hydrogen Sulfide (A4) □ Loamy Gleyed Matrix (F2) □ Other (Explain in Remarks   □ Depleted Below Dark Surface (A11) □ Depleted Matrix (F3) □ Thick Dark Surface (A12) □ Redox Dark Surface (F6)   □ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) 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: No hyrics soil indicators      YDROLOGY
□ Thick Dark Surface (A12) □ Redox Dark Surface (F6)   □ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7)   □ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8)    **Restrictive Layer (if present):  Type:  Depth (inches):  Remarks: No hyrics soil indicators  **Type: No Matrix (S4)    **Hydric Soil Present? Yes □ No Matrix (S4)  **Type: No Matrix
Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) □ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) □ Wetland hydrology must be present, unless disturbed or problematic.    Restrictive Layer (if present):
Sandy Gleyed Matrix (S4) Redox Depressions (F8) wetland hydrology must be present, unless disturbed or problematic.  Restrictive Layer (if present):  Type: Depth (inches):  Remarks: No hyrics soil indicators    Hydric Soil Present? Yes  No ⊠
## Restrictive Layer (if present):  Type: Depth (inches): No ☒  Remarks: No hyrics soil indicators  ###################################
Restrictive Layer (if present):  Type: Depth (inches): Hydric Soil Present? Yes No   Remarks: No hyrics soil indicators  HYDROLOGY
Type:
Remarks: No hyrics soil indicators  IYDROLOGY
Remarks: No hyrics soil indicators  IYDROLOGY
Wetland Hydrology Indicators:
Primary Indicators (minimum of one required; check all that apply)  Secondary Indicators (2 or more required)
Surface Water (A1)  Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)  Water Stained Leaves (B9) (MLRA 4A, and 4B))
☐ High Water Table (A2) ☐ Salt Crust (B11) ☐ Drainage Patterns (B10)
☐ Saturation (A3) ☐ Aquatic Invertebrates (B13) ☐ Dry-Season Water Table (C2)
☐ Water Marks (B1) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation Visible on Aerial Imager
☐ Sediment Deposits (B2)       ☐ Oxidized Rhizospheres along Living Roots (C3)       ☐ Geomorphic Position (D2)         ☐ Drift Deposits (B3)       ☐ Presence of Reduced Iron (C4)       ☐ Shallow Aquitard (D3)
□ Drift Deposits (B3)       □ Presence of Reduced Iron (C4)       □ Shallow Aquitard (D3)         □ Algal Mat or Crust (B4)       □ Recent Iron Reduction in Tilled Soils (C6)       □ FAC-Neutral Test (D5)
☐ Iron Deposits (B5) ☐ Stunted or Stressed Plants (D1)(LRR A) ☐ Raised Ant Mounds (D6(LRR A)
☐ Surface Soil Cracks (B6) ☐ Other (Explain in Remarks) ☐ Frost-Heave Hummocks (D7)
☐ Inundation Visible on Aerial Imagery (B7)
□ Sparsely Vegetated Concave Surface (B8)
Field Observations:
Surface Water Present? Yes ☐ No ☒ Depth (inches):
Water Table Present? Yes ☐ No ☒ Depth (inches):
(includes capillary fringe)
(includes capillary fringe)
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Project/Site: Weyerhaeuser		City/C	ounty	r: <u>Federal W</u>	/ay/King	Sampling Date:4	/9/16	
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: EI-WET1		
Investigator(s): Richard Tveten				Section, To	wnship, Range: Section 16	6, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	f (concave,	convex, none): concave	Slop	oe (%): <1	
Subregion (LRR): LRR A	_ Lat: 47.30	09559	)		Long: -122.298034	Datum	n: <u>NAD83</u>	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation No, Soil No, or Hydrology No significantly di	•				ımstances" present? Yes	⊠ No □		
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.			
SUMMARY OF FINDINGS – Attach site map		•		•		•	atures. etc.	
	<u>g</u>		<b>P</b> ;	9   0				
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			Is th	e Sampled	Area			
Wetland Hydrology Present? Yes ⊠ No □			with	in a Wetlan	nd? Yes⊠ No	o 🗌		
Remarks:								
<b>VEGETATION – Use scientific names of plant</b>	ts.							
T. 0 (D				Indicator	Dominance Test works	heet:		
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Spe That Are OBL, FACW, or	ecies	(4)	
1. None					That Are OBL, FACW, or	1 FAC: 4	(A)	
3.					Total Number of Domina Species Across All Strata		(B)	
4.							(D)	
	0				Percent of Dominant Spe That Are OBL, FACW, or		(A/B)	
Sapling/Shrub Stratum (Plot size: 15ft)							(	
1. Rubus spectabilis	30	<u>Y</u>		<u>FAC</u>	Prevalence Index works		, b	
2					Total % Cover of:  OBL species			
3. 4.					FACW species			
5.					FAC species			
	30				FACU species			
Herb Stratum (Plot size: 5ft)					UPL species	x 5 =		
1. Stellaria crispa	30			FAC	Column Totals:	(A)	(B)	
2. Carex deweyana		<u>Y</u>		FAC	Prevalence Index :	- R/Δ - 3		
3. Claytonia sibirica4.				<u>FAC</u>	Hydrophytic Vegetation			
5.					□ Dominance Test is >			
6.					☐ Prevalence Index is :	≤3.0 <sup>1</sup>		
7.					☐ Morphological Adapt			
8.						or on a separate s	•	
	65	= To	otal Co	over	Problematic Hydroph	ytic Vegetation (	Explain)	
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil	and watland hydr	ology must	
1. None					be present, unless distur	bed or problemati	ic.	
2.	0		ntal C	over	Hydrophytic			
					Vegetation			
	er of Biotic C	Crust (	0		Present? Yes	No 🗌		
Remarks:								

Depth	cription: (Descri Matri		iehiii ne		ox Featu		or contiff	n une absen	ce of indicators.)		
(inches)	Color (moist)	%	Colo	r (moist)	%	_Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
<u>0-10</u>	10YR 2/1	100						<u>Loam</u>			
10-16	10YR 5/1	90	<u>10YF</u>	R 4/6	10	С	M	silt	Gravelly, prominent feature		
	_								_		
-											
									<del>-</del> -		
						-		-			
	-						·				
	oncentration, D=I						ted Sand G		Location: PL=Pore Lining, M=Matrix.		
-	Indicators: (App	olicable to				otea.)			ators for Problematic Hydric Soils <sup>3</sup> :		
☐ Histosol	oipedon (A2)			Sandy Redox ( Stripped Matrix					cm Muck (A10) ad Parent Material (TF2)		
☐ Black Hi				oamy Mucky	, ,	F1 (except	MLRA 1))		ery Shallow Dark Surface (TF12)		
☐ Hydroge	n Sulfide (A4)			oamy Gleyed			,,		her (Explain in Remarks		
	d Below Dark Sur	face (A11)		epleted Matrix	` ,						
	ark Surface (A12)	,		Redox Dark Su	,	,		31 1			
	lucky Mineral (S1 Gleyed Matrix (S4)			Depleted Dark Redox Depress					ators of hydrophytic vegetation and		
☐ Sandy C	neyed Matrix (04)		U '	redox Depres	310113 (1 0	,		wetland hydrology must be present, unless disturbed or problematic.			
Restrictive	Layer (if present	:):							·		
Type:		-									
Depth (inches): Hydric Soil Present? Yes								oil Present? Yes ⊠ No □			
Remarks:											
Tomano.											
HYDROLO	GY										
	drology Indicato	ors:									
-	cators (minimum		ired; che	ck all that app	oly)			Sec	condary Indicators (2 or more required)		
	e Water (A1)			☐ Water-St		aves (B9)	except ML	MLRA 1, 2,			
	, ,			4A, and 4B)	)	, ,	•	4A, and 4B))			
_ •	/ater Table (A2)			☐ Salt Cru	. ,			☐ Drainage Patterns (B10)			
Satura     Sa				☐ Aquatic					☐ Dry-Season Water Table (C2)		
	Marks (B1)			☐ Hydroge		•			Saturation Visible on Aerial Imagery (C9)		
	ent Deposits (B2)			Oxidized		oneres alor uced Iron (		oots (C3)	☐ Geomorphic Position (D2) ☐ Shallow Aguitard (D3)		
	eposits (B3)  Mat or Crust (B4)			☐ Recent I			•	<b>'</b> 6)	FAC-Neutral Test (D5)		
_	eposits (B5)						(D1)( <b>LRR</b> A	,	Raised Ant Mounds (D6(LRR A)		
	e Soil Cracks (B6	)				Remarks)	(51)(=1111)		☐ Frost-Heave Hummocks (D7)		
	ion Visible on Ae		(B7)			,					
	ly Vegetated Con-	• .	, ,								
Field Obser	, ,		- ( - /								
Surface Wat	ter Present?	Yes 🗌	No 🛛	Depth (inche	es):						
Water Table	Present?	Yes	No 🖂	Depth (inche							
Saturation P	resent?		No 🗌	Depth (inche			Wet	and Hydrol	ogy Present? Yes ⊠ No □		
	pillary fringe)										
Describe Re	corded Data (stre	eam gauge,	monitori	ng well, aerial	pnotos,	previous ir	ispections),	ır available:			
Domoulisi											
Remarks:											

Project/Site: Weyerhaeuser		City/C	ounty:	Federal W	/ay/King	Samplin	ng Date: <u>4/9/16</u>	
Applicant/Owner: Federal Way Campus, LLC					State: WA	Samplin	ng Point: <u>EJ-UF</u>	PL1
Investigator(s): Richard Tveten			\$	Section, To	wnship, Range: Section	า 16, T21N <u>,</u>	R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	ıl relief	(concave,	convex, none): None		Slope (%)	): <u>2</u>
Subregion (LRR): <u>LRR A</u>	Lat: 47.30	09238	3		Long: <u>-122.297874</u>		Datum: NAI	D83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	pes			NWI classif	ication: Nor	ne	
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ır? Ye	es 🛛	No □ (If	no, explain in Remark	s.)		
Are Vegetation No, Soil No, or Hydrology No significantly di	isturbed?	A	Are "No	ormal Circu	ımstances" present? Y	′es ⊠ No		
Are Vegetation No, Soil No, or Hydrology No naturally proble		(If	f need	ed, explain	any answers in Remar	·ks.)		
SUMMARY OF FINDINGS - Attach site map					•		tant feature	es, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒					_			
Hydric Soil Present? Yes ☐ No ☒				Sampled		No 🔽		
Wetland Hydrology Present? Yes ☐ No ☒			within	n a Wetlan	d? Yes 🗌	INO 🔯		
Remarks:								
VEGETATION – Use scientific names of plan								
Tree Stratum (Plot size: 30ft)	Absolute % Cover			Indicator Status	Dominance Test wo			
1. Fraxinus excelsior	30			NL NL	Number of Dominant That Are OBL, FACW		2	(A)
Pseudotsuga menziesii	30			FACU	Total Number of Dom			` '
3. Thuja plicata	20	Y		FAC	Species Across All St		7	(B)
4					Percent of Dominant	Snacias		
Conline (Chruib Ctrotum (Diet size: 45tt)	80	= Tc	otal Co	ver	That Are OBL, FACW		28.6	(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)  1. Oemleria cerasiformis	15	<b>v</b>		FACII	Prevalence Index we	orksheet:		
Rubus spectabilis					Total % Cover of		Multiply by:	
3.					OBL species			
4.					FACW species			
5					FAC species	x	3 =	
	40	= To	otal Co	ver	FACU species	x	4 =	_
Herb Stratum (Plot size: 5ft)	20	V		FACIL	UPL species			
Polystichum munitum     Rubus ursinus	<u>20</u>			<u>FACU</u> FACU	Column Totals:	(A)	)	(B)
3					Prevalence Inde	ex = B/A =		
4.					Hydrophytic Vegeta			
5.					□ Dominance Test i	s >50%		
6					☐ Prevalence Index	is ≤3.0¹		
7.					☐ Morphological Ad		Provide suppor separate sheet	
8					□ Problematic Hydr		•	
Woody Vine Stratum (Plot size: 15ft)	<u>35</u>	= Tc	otal Co	ver	r robicinatic riyar	spriyae veg	ctation (Expla	)
1. None					<sup>1</sup> Indicators of hydric s	oil and wetl	and hydrology	must
2.					be present, unless dis			
	0	= To	otal Co	ver	Hydrophytic	<u></u>		
% Bare Ground in Herb Stratum 65 % Covi	er of Biotic C				Vegetation Present?	′es □ No	<b>.</b> 🖂	
Remarks: Fraxinus excelsior (European ash) is not listed in						_		
The state of the s			2291112	-30 do d W				

Depth	ription: (Descrit Matrix		lepth ne		i <b>ment the</b> i ox Feature		or confirn	n the absen	ice of indicators.)
(inches)	Color (moist)	%	Colo	r (moist)	%		Loc <sup>2</sup>	Texture	Remarks
0-8	10YR 3/3	100						Loam	
8-16	10YR 3/4	100						Silty loam	
			_						
<del></del>								-	
			_					-	
	-								
	oncentration, D=D						ed Sand G		Location: PL=Pore Lining, M=Matrix.
-	Indicators: (App	licable to				ed.)			ators for Problematic Hydric Soils <sup>3</sup> :
Histosol	` '			Sandy Redox (					cm Muck (A10)
☐ Histic Ep	ipedon (A2)			Stripped Matrix .oamy Mucky I	` '	(excent	MI RA 1\\		ed Parent Material (TF2) ery Shallow Dark Surface (TF12)
_	n Sulfide (A4)			pamy Gleyed I				· <del></del>	ther (Explain in Remarks
	l Below Dark Surfa	ace (A11)		epleted Matrix	, ,			_	
	rk Surface (A12)			Redox Dark Su	, ,				
	lucky Mineral (S1)			Depleted Dark	•	7)			cators of hydrophytic vegetation and
☐ Sandy G	leyed Matrix (S4)		L ⊦	Redox Depress	sions (F8)				etland hydrology must be present, nless disturbed or problematic.
Restrictive	Layer (if present)							1	need distance of problematic.
	- Layor ( p. 66611.)								
	ches):							Hvdric S	soil Present? Yes ☐ No ⊠
	hydric soil indica								
	, , , , , , , , , , , , , , , , , , , ,								
L HYDROLO	GV.								
	drology Indicator								
•	cators (minimum o		irad: cha	ock all that ann	alv)			So	econdary Indicators (2 or more required)
	e Water (A1)	i one requ	ileu, che	<u>عدد ما تا المد مها</u> Water-St ∐	• •	(BQ) (	evcent MI		Water Stained Leaves (B9) (MLRA 1, 2
Odnaci	water (AT)			4A, and 4B)		/C3 (D3) (C	oxcept IIIL		4A, and 4B))
☐ High W	ater Table (A2)			☐ Salt Cru	st (B11)				☐ Drainage Patterns (B10)
☐ Satura	ion (A3)			☐ Aquatic	Invertebrat	es (B13)			☐ Dry-Season Water Table (C2)
☐ Water	, ,			☐ Hydroge		` '			Saturation Visible on Aerial Imagery (C
	ent Deposits (B2)				Rhizosph		_	oots (C3)	Geomorphic Position (D2)
	eposits (B3)			☐ Presenc				<b>10</b> )	Shallow Aquitard (D3)
_	lat or Crust (B4) posits (B5)			☐ Recent I	or Stresse		`	,	☐ FAC-Neutral Test (D5) ☐ Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)				xplain in R		DI)( <b>LKK P</b>		Frost-Heave Hummocks (D7)
	ion Visible on Aeri	al Imagery	(R7)		лрішіі і і і	iomarko)			
	y Vegetated Conc								
Field Obser		ave Ganac	(B0)						
Surface Wat		Yes □	No 🛛	Depth (inche	is):				
Water Table			No 🖾	Depth (inche					
Saturation P			No 🖾	Depth (inche			Wetl	and Hvdrol	logy Present? Yes ☐ No ⊠
(includes ca	oillary fringe)							-	
Describe Re	corded Data (strea	am gauge,	monitori	ng well, aerial	photos, pr	evious ins	spections),	if available:	
Remarks: No	wetland hydrolog	y indicator	rs obser\	/ed					

Project/Site: Weyerhaeuser		City/C	County:	Federal Wa	ay/King	Sampling Date: 4/9/	/16
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: EJ	-WET1
Investigator(s): Richard Tveten			s	ection, Tov	wnship, Range: Section 16	3, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief	(concave,	convex, none): convex	Slope	(%): <u>5</u>
Subregion (LRR): LRR A	_ Lat: 47.30	09238	3		Long: -122.297874	Datum:	NAD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8							
Are climatic / hydrologic conditions on the site typical for this	time of vea	ır? Ye	es 🏻	No □ (If	no. explain in Remarks.)		
Are Vegetation No, Soil No, or Hydrology No significantly di	•				mstances" present? Yes	⊠ No □	
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map							ures etc
	2110 Willig	<u> </u>	piiig	point io	outions, transcotts,	mportant route	<u> </u>
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			Is the	Sampled A	Area		
Wetland Hydrology Present? Yes ⊠ No □			within	a Wetland	d? Yes⊠ No	· 🗆	
Remarks:							
<b>VEGETATION – Use scientific names of plant</b>	s.						
	Absolute			ndicator	Dominance Test works	heet:	
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Spe		(4)
Fraxinus latifolia     2.					That Are OBL, FACW, or	FAC: 2	(A)
3.					Total Number of Dominal		(B)
4.					Species Across All Strata	a: <u>2</u>	(D)
	40				Percent of Dominant Spe That Are OBL, FACW, or		(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)							(,,,,,,,
1. Rubus spectabilis	<u>35</u>	<u>Y</u>	<u>F</u>	FAC	Prevalence Index works		
2.					Total % Cover of:		
3. 4.					OBL species		
					FAC species		
5.	35				FACU species		
Herb Stratum (Plot size: 5ft)					UPL species		
1. None					Column Totals:	(A)	(B)
2.					Duniyalayaa luday	D/A	
3.					Prevalence Index = Hydrophytic Vegetation	-	<u> </u>
4.		-			Dominance Test is >		
5 6					☐ Prevalence Index is ≤		
7.	· ·				☐ Morphological Adapta	ations¹ (Provide sup	porting
8.						or on a separate sh	,
	0	= Tc	otal Cov	/er	☐ Problematic Hydroph	ytic Vegetation <sup>1</sup> (Ex	(plain)
Woody Vine Stratum (Plot size: 15ft)					Alle diseases of booking and to	d (l d lb do - l -	
1. None		-		<del>-</del>	<sup>1</sup> Indicators of hydric soil a be present, unless disturb	and wettand nydroid bed or problematic.	ogy must
2.			otal Car	<u> </u>	Hydrophytic		
	0				Vegetation		
	er of Biotic C	Crust _			Present? Yes	⊠ No □	
Remarks:							

	ription: (Describ	e to the d	eptn ne				or confirm	n the absence	e or indicators.)
Depth (inches)	Matrix Color (moist)	%	Colo	Rec r (moist)	lox Feature %	S Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-2									Duff
2-6	10YR 3/2	100						Mucky loam	
	1011 3/2	100	_		,,,			iviucky idairi	Duff reads and wood
<u>6-10</u>									Duff, roots, and wood
<u>10-16</u>	10YR 6/1	100						Sandy silt	
						- <del></del>			
		_							
1Type: C-C	oncentration, D=De	anletion F	- PM-Padi	uced Matrix (		d or Coate	ad Sand G	raine <sup>2</sup> l o	ocation: PL=Pore Lining, M=Matrix.
	Indicators: (Appl						su Sanu G		ors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol				Sandy Redox		,			m Muck (A10)
	ipedon (A2)			Stripped Matri					Parent Material (TF2)
☐ Black His	stic (A3)			oamy Mucky	Mineral (F	(except	MLRA 1))	☐ Ver	y Shallow Dark Surface (TF12)
_ , ,	n Sulfide (A4)			oamy Gleyed	, ,			☐ Othe	er (Explain in Remarks
	Below Dark Surfa	ce (A11)		epleted Matrix	` '				
	rk Surface (A12) lucky Mineral (S1)			Redox Dark S Depleted Dark	, ,	7)		3Indicat	ors of hydrophytic vegetation and
	leyed Matrix (S4)			Redox Depres	,	')			and hydrology must be present,
	,(,				(, ,				ss disturbed or problematic.
Restrictive	Layer (if present):								
Type:									
Depth (in	ches):		_					Hydric Soi	I Present? Yes ⊠ No □
Remarks:									
HYDROLO	C.V.								
		_							
1	drology Indicators		irodi obo	al all that an	داده)			Cooo	andon Indicators (2 or more required)
	cators (minimum of	one requ	irea; cne			(DO) (			andary Indicators (2 or more required)
□ Surface	e Water (A1)			<ul><li>☐ Water-S</li><li>4A, and 4B</li></ul>		/es (B9) (	except IVIL		Water Stained Leaves (B9) (MLRA 1, 2, A, and 4B))
☐ High W	ater Table (A2)			☐ Salt Cru	ıst (B11)				Drainage Patterns (B10)
	ion (A3)			☐ Aquatic	Invertebrat	es (B13)			Dry-Season Water Table (C2)
☐ Water I	Marks (B1)			☐ Hydroge	en Sulfide (	Odor (C1)			Saturation Visible on Aerial Imagery (C9)
☐ Sedime	ent Deposits (B2)			Oxidize	d Rhizosph	eres alon	g Living Ro	oots (C3)	Geomorphic Position (D2)
☐ Drift De	eposits (B3)			Present	ce of Reduc	ced Iron (C	C4)		] Shallow Aquitard (D3)
_	lat or Crust (B4)			Recent			`	,	` '
☐ Iron De					or Stresse		D1)( <b>LRR A</b>		Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)			☐ Other (E	Explain in R	temarks)		L	Frost-Heave Hummocks (D7)
	ion Visible on Aeria								
_ '	y Vegetated Conca	ave Surfac	ce (B8)						
Field Obser	vations:								
Surface Wat	er Present?	Yes 🗌	No 🛚	Depth (inche	es):				
Water Table	Present?	Yes ⊠	No 🗌	Depth (inche	es): <u>6</u>				
Saturation P		Yes 🛚	No 🗌	Depth (inche	es): <u>0</u>		Wet	and Hydrolog	gy Present? Yes ⊠ No 🗌
(includes car Describe Re	oillary fringe) corded Data (strea	m gauge.	monitori	ng well. aeria	l photos, ni	evious ins	spections).	if available:	
	(000	J390,		J =, ao.ia	,, p.		, , ,		
Remarks:									

Project/Site: Weyerhaeuser		City/C	County: <u>Federal V</u>	Vay/King	Sampling Date: 4/9/16
Applicant/Owner: Federal Way Campus, LLC				State: WA	Sampling Point: EK-UPL1
Investigator(s): Richard Tveten			Section, To	ownship, Range: <u>Sectio</u>	on 16, T21N, R4E
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief (concave	, convex, none): None	Slope (%): 2
Subregion (LRR): <u>LRR A</u>	Lat: 47.30	09099	)	Long: -122.297926	Datum: NAD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation No, Soil No, or Hydrology No significantly d	-			umstances" present?	
Are Vegetation No, Soil No, or Hydrology No naturally probl				n any answers in Rema	
SUMMARY OF FINDINGS – Attach site map					
	<u></u>		,		
Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒			Is the Sampled	l Area	
Wetland Hydrology Present? Yes ☐ No ☒			within a Wetla	nd? Yes □	No ⊠
Remarks:					
VEGETATION – Use scientific names of plan	ts.				
T 0 (D) (D) (D)	Absolute		inant Indicator	Dominance Test wo	orksheet:
Tree Stratum (Plot size: 30ft)			cies? Status	Number of Dominant	
Pseudotsuga menziesii     Thuja plicata	<u>20</u> <u>15</u>			That Are OBL, FACV	V, or FAC: <u>3</u> (A)
3. Fraxinus excelsior				Total Number of Dor Species Across All S	
4.					
	70		otal Cover	Percent of Dominant That Are OBL, FACV	: Species V, or FAC: <u>37.5</u> (A/B)
Sapling/Shrub Stratum (Plot size: 15ft)					· · · · · · · · · · · · · · · · · · ·
1. Oemleria cerasiformis	<u>15</u>			Prevalence Index w	
Rubus spectabilis     Acer circinatum					f: Multiply by: x 1 =
4.					x 2 =
5.					x 3 =
	30			1	x 4 =
Herb Stratum (Plot size: 5ft)				UPL species	x 5 =
1. Polystichum munitum	20			Column Totals:	(A) (B)
2. Rubus ursinus	10			Provolence Ind	lex = B/A =
3. Rubus armeniacus	10			Hydrophytic Vegeta	
4 5.				☐ Dominance Test	
6.				☐ Prevalence Index	
7.					daptations <sup>1</sup> (Provide supporting
8.					arks or on a separate sheet)
	40	= To	otal Cover	☐ Problematic Hyd	rophytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 15ft)				1 ndiantara of hydria	acil and watland budgalage must
1. None					soil and wetland hydrology must isturbed or problematic.
2			etal Cayor	Hydrophytic	
	0			Vegetation	v ==
	er of Biotic C				Yes 🗌 No 🛛
Remarks: Fraxinus excelsior (European ash) is considere	a a wetland	tree ii	n ⊏urope. Not li	sted in US.	

Depth	cription: (Describ Matrix		eptn nee		ment tne ox Feature		or confirm	n the absenc	e of indicators.)	
(inches)	Color (moist)	%	Color	(moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	_
<u>0-1</u>									Duff	
1-3	10YR 3/3	100						Loam		_
<u>3-7</u>	10YR 6/3	90	<u>10YR</u>	5/8	10	<u>C</u>	<u>M</u>	Silt	Prominent feature	_
<u>7-16</u>	10YR 3/3	100								_
										_
										_
										_
<sup>1</sup> Type: C=C	oncentration, D=D	epletion, R	M=Redu	ced Matrix, C	S=Covere	d or Coat	ed Sand G	rains. <sup>2</sup> L	ocation: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators: (App	licable to	all LRRs	, unless othe	rwise not	ed.)		Indica	tors for Problematic Hydric Soils <sup>3</sup> :	
☐ Histosol	` '		☐ S	andy Redox (	S5)			_	cm Muck (A10)	
	pipedon (A2)		_	tripped Matrix	` '				d Parent Material (TF2)	
☐ Black His	` '			oamy Mucky N		-	MLRA 1))		ry Shallow Dark Surface (TF12)	
	n Sulfide (A4)	(Δ44)		amy Gleyed N	. ,			☐ Oth	ner (Explain in Remarks	
	d Below Dark Surfa ark Surface (A12)	ace (ATT)		epleted Matrix edox Dark Su	, ,					
	lucky Mineral (S1)			epleted Dark	, ,	7)		3Indica	itors of hydrophytic vegetation and	
-	Gleyed Matrix (S4)			edox Depress		',			land hydrology must be present,	
	noyou mann (C )			5 don 2 op. 555	(. 0)				ess disturbed or problematic.	
Restrictive	Layer (if present)	:								
Type:										
Depth (in	ches):							Hydric So	oil Present? Yes ☐ No 🏻	
Remarks: It	appears soils were	disturbed	from 3-7	", having com	e from We	etland EK	. No hydric	soil indicators	s identified	
HYDROLO	GY.									
	drology Indicator	·e-								
,	cators (minimum o		red ched	ck all that app	lv)			Sec	ondary Indicators (2 or more required)	
	e Water (A1)	r one requi	100, 0110	☐ Water-Sta		/AS (RQ) (	evcent MI		☐ Water Stained Leaves (B9) (MLRA 1	1 2
Ounact	e water (AT)			4A, and 4B)		/C3 (D3) (	except IIIL		IA, and 4B))	, _,
_ •	/ater Table (A2)			Salt Crus	` '			_	Drainage Patterns (B10)	
	tion (A3)			Aquatic I					Dry-Season Water Table (C2)	
☐ Water I	` '			Hydroge		` '		L	Saturation Visible on Aerial Imagery	(C9)
	ent Deposits (B2)						g Living Ro	oots (C3) L	Geomorphic Position (D2)	
	eposits (B3)			Presence				L	Shallow Aquitard (D3)	
_	fat or Crust (B4)						led Soils (C	,	FAC-Neutral Test (D5)	
	eposits (B5)						D1)( <b>LRR</b> A		Raised Ant Mounds (D6(LRR A)	
	e Soil Cracks (B6)			☐ Other (E	xplain in R	Remarks)		L	Frost-Heave Hummocks (D7)	
	ion Visible on Aeri									
	y Vegetated Conc	ave Surfac	e (B8)							
Field Obser		_	_							
Surface Wat	er Present?		No 🛚	Depth (inches						
Water Table	Present?	Yes 🗌	No 🛚	Depth (inches	s):					
Saturation P (includes cap		Yes 🗌	No 🛚	Depth (inches	s):		Wetl	and Hydrolo	ogy Present? Yes ☐ No ☒	
	corded Data (stream	am gauge,	monitorir	ng well, aerial	photos, pi	revious in	spections),	if available:		
Remarks: No	o wetland hydolog	v indicators	identifie	ed						
rtomanto. rt	o	<b>,</b>								
rtomanto. 14	ooaay aoog.	,								

Project/Site: Weyerhaeuser	(	City/C	County: Federa	al Way/King	_ Sampling	g Date: <u>4/9/16</u>	
Applicant/Owner: Federal Way Campus, LLC				State: WA	_ Samplin	g Point: <u>EK-W</u>	/ET1
Investigator(s): Richard Tveten			Section	, Township, Range: Section	16, T21N,	R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief (conca	ave, convex, none): Concave	)	Slope (%	): <u>5</u>
Subregion (LRR): <u>LRR A</u>							
Soil Map Unit Name: <u>Alderwood gravelly sandy loam, 0 to 8</u>							
Are climatic / hydrologic conditions on the site typical for this						-	
Are Vegetation No, Soil No, or Hydrology No significantly di	•			ircumstances" present? Ye		П	
				lain any answers in Remark	_		
Are Vegetation No, Soil No, or Hydrology No naturally proble		,		•	,		
SUMMARY OF FINDINGS – Attach site map s	showing	sam	pling poin	t locations, transects	i, import	ant feature	es, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □			Is the Samp	led Area			
Hydric Soil Present? Yes ⊠ No □			within a We		No 🗆		
Wetland Hydrology Present? Yes ⊠ No □							
Remarks:							
VEGETATION – Use scientific names of plant							
VEGETATION – Ose scientific flames of plant		Dom	ninant Indicato	or   Dominance Test worl	vehoot:		
Tree Stratum (Plot size: 30ft)			cies? Status				
1. None						2	(A)
2				Total Number of Domir	aant		
3.				Species Across All Stra		2	(B)
4.				Percent of Dominant S	nacies		
Ocalica (Obsala Otachura (Plataire 45%)	0	= To	otal Cover	That Are OBL, FACW,		100	(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)	45	V	EA (C) A (	Prevalence Index wo	rkshoot:		
1. Spiraea douglasii				_		Multiply by:	
Rubus spectabilis     3.				OBL species			
				FACW species			
5.				FAC species			
J	70		otal Cover	FACU species			
Herb Stratum (Plot size: 5ft)	10	- 1	otal Gover	UPL species			
1. None				Column Totals:			
2.				=.			_ ` ,
3.				Prevalence Index			
4.				Hydrophytic Vegetati		ors:	
5				_ Dominance Test is			
6.				Prevalence Index is			
7				_			
8.				Problematic Hydro		•	•
Woody Vine Stratum (Plot size: 15ft)	0	= To	otal Cover		,	(=	,
1. None				<sup>1</sup> Indicators of hydric so	il and wetla	and hydrology	must
2.				be present, unless dist			
	0	= To	otal Cover	Hydrophytic			
				Vegetation	<b>□</b>		
	er of Biotic C	Crust		Present? Ye	es 🛛 No		
Remarks:							

	cription: (Descri		aeptn nee		iment the ox Feature		or confirm	n the absence	e or indicators.)
Depth (inches)	Matrix Color (moist)	%	Color	(moist)	ox Feature %	es <u>Type<sup>1</sup></u>	Loc <sup>2</sup>	Texture	Remarks
0-2									Duff
2-11	10YR 3/2	100						Mucky loam	
				:/6	20		N4	-	
<u>11-16</u>	10YR 5/2	<u>80</u>	<u>5YR 5</u>	0/6	20	_ <u>C</u>	<u>M</u>	silt	gravelly
	-		_						· -
			_						
¹Type: C=C	oncentration, D=D	epletion,	RM=Redu	ced Matrix, C	S=Covere	ed or Coat	ed Sand G	rains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
	Indicators: (App			•					ors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	(A1)		☐ Sa	andy Redox (	(S5)			☐ 2 ci	m Muck (A10)
-	pipedon (A2)			ripped Matrix					Parent Material (TF2)
☐ Black His	` '			amy Mucky			MLRA 1))		ry Shallow Dark Surface (TF12)
	n Sulfide (A4) d Below Dark Surf	000 (111)		amy Gleyed pleted Matrix		2)		∐ Oth	er (Explain in Remarks
	ark Surface (A12)	ace (ATT)		edox Dark Su	` '	١			
	lucky Mineral (S1)	)	· <del></del>	epleted Dark	` '	•		<sup>3</sup> Indicat	tors of hydrophytic vegetation and
-	leyed Matrix (S4)			edox Depres					and hydrology must be present,
								unle	ess disturbed or problematic.
Restrictive	Layer (if present)	):							
Type:									
Depth (in	ches):							Hydric So	il Present? Yes ⊠ No □
Remarks:								•	
HYDROLO	GY								
Wetland Hy	drology Indicato	rs:							
Primary Indi	cators (minimum o	of one requ	uired; ched	k all that app	oly)			Seco	ondary Indicators (2 or more required)
☐ Surface	e Water (A1)			☐ Water-St	ained Lea	ves (B9) (	except ML	.RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2,
_				4A, and 4B)				4.	A, and 4B))
_ •	ater Table (A2)			☐ Salt Cru	` '			_	Drainage Patterns (B10)
⊠ Saturat				Aquatic					Dry-Season Water Table (C2)
☐ Water I	` ,			Hydroge		, ,			Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)						g Living Ro	DOTS (C3) L	Geomorphic Position (D2)
	eposits (B3) fat or Crust (B4)			☐ Recent I		ced Iron (	,	ے اعد	Shallow Aquitard (D3) FAC-Neutral Test (D5)
_	eposits (B5)						(D1)( <b>LRR</b>	,	」FAC-Neutral Test (D5) ]Raised Ant Mounds (D6( <b>LRR A</b> )
	e Soil Cracks (B6)				xplain in f		(D 1)( <b>L</b> 11117		Frost-Heave Hummocks (D7)
	ion Visible on Aer		v (B7)			10)		_	
	v Vegetated Cond								
Field Obser	, ,	ave ouna	(D0)						
Surface Wat		Yes 🗌	No ⊠	Depth (inche	76).				
Water Table		Yes ⊠	No 🗆	Depth (inche	<i>,</i> ——				
Saturation P		Yes ⊠	No 🗆	Depth (inche	. —		Wet	land Hydrolo	gy Present? Yes ⊠ No □
(includes ca		100 🔼	110 🗆	Dopui (mone	,5). <u>0</u>		****	iana myarolo;	gyrresent. res 🖂 ne 🗀
Describe Re	corded Data (stre	am gauge	, monitorir	ig well, aerial	photos, p	revious in	spections),	if available:	
Remarks:									
Remarks:									

Project/Site: Weyerhaeuser		City/C	County:	Federal W	/ay/King	Sampling Date: 4/9/10	6
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: <u>EL-L</u>	JPL1
Investigator(s): Richard Tveten			\$	Section, To	wnship, Range: Section	n 16, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief	(concave,	convex, none): None	Slope (%	%): <u>2</u>
Subregion (LRR): LRR A	Lat: 47.30	09049	9		Long: <u>-122.297756</u>	Datum: N	AD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	pes			NWI classifi	ication: None	
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Ye	es 🛛	No ☐ (If	no, explain in Remarks	s.)	
Are Vegetation No, Soil No, or Hydrology No significantly d	-				· ımstances" present?   Y		
Are Vegetation No, Soil No, or Hydrology No naturally probl		(It	f need	ed, explain	any answers in Remark	ks.)	
SUMMARY OF FINDINGS - Attach site map							res, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒							
Hydric Soil Present? Yes ☐ No ☒				Sampled		No 57	
Wetland Hydrology Present? Yes ☐ No ☒			withii	n a Wetlan	d? Yes 🗌	NO 🔼	
Remarks:							
VEGETATION – Use scientific names of plan							
Tree Stratum (Plot size: 30ft)	Absolute <u>% Cover</u>			Indicator Status	Dominance Test wor		
1. Fraxinus excelsior	· ·			NL	Number of Dominant That Are OBL, FACW		(A)
Pseudotsuga menziesii				FACU	Total Number of Dom		_ , ,
3. Thuja plicata	20	Y		FAC	Species Across All St		_ (B)
4					Percent of Dominant S	Snecies	
Conline (Chrush Ctrotum (Diot size: 45tt)	80	= To	otal Co	ver	That Are OBL, FACW		_ (A/B)
Sapling/Shrub Stratum (Plot size: 15ft)  1. Oemleria cerasiformis	15	<b>v</b>		FACII	Prevalence Index wo	orksheet:	
Rubus spectabilis						: Multiply by:	
3.					<u>'</u>	x 1 =	
4.	·			<u> </u>		x 2 =	
5					FAC species	x 3 =	
	40	= To	otal Co	ver	FACU species	x 4 =	
Herb Stratum (Plot size: 5ft)	20	V		FACIL		x 5 =	
Polystichum munitum      Rubus ursinus	<u>20</u>			<u>FACU</u> FACU	Column Totals:	(A)	(B)
3					Prevalence Inde	ex = B/A =	
4.					Hydrophytic Vegetat	tion Indicators:	
5.					□ Dominance Test is	s >50%	
6					☐ Prevalence Index	is ≤3.0 <sup>1</sup>	
7						aptations <sup>1</sup> (Provide supperks or on a separate shee	
8						ophytic Vegetation <sup>1</sup> (Exp	·
Woody Vine Stratum (Plot size: 15ft)	<u>35</u>	= To	otal Co	ver		EAD	,
1. None					<sup>1</sup> Indicators of hydric se	oil and wetland hydrolog	y must
2.					be present, unless dis	sturbed or problematic.	
	0	= To	otal Co	ver	Hydrophytic		
% Bare Ground in Herb Stratum 65 % Cov	er of Biotic C	Pricet			Vegetation Present? Y	′es □ No ⊠	
Remarks: F. excelsior (European ash) is not listed in the U							
	,		•				

Profile Desc Depth				Dod	ox Feature	•			
(inches)	Matrix Color (moist)	%	Colo	r (moist)	<u> </u>		Loc <sup>2</sup>	Texture	Remarks
0-8	10YR 3/3	100						Loam	
8-16	10YR 3/4	100						Silty loam	
0 10	1011(0/1							Only loan	
									_
						. ———		-	
	_								
<sup>1</sup> Type: C=C	oncentration, D=D	epletion,	RM=Red	uced Matrix, C	S=Covered	d or Coate	ed Sand G	rains. ²I	_ocation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRR	s, unless oth	erwise not	ed.)		Indica	ators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	` '			Sandy Redox (	S5)			□ 2	cm Muck (A10)
	pipedon (A2)			Stripped Matrix	` '				ed Parent Material (TF2)
☐ Black His	` '			oamy Mucky		(except	MLRA 1))	<del></del>	ery Shallow Dark Surface (TF12)
	n Sulfide (A4) I Below Dark Surfa	(111)		oamy Gleyed epleted Matrix	, ,			□Ot	her (Explain in Remarks
	ark Surface (A12)	ice (ATT)		Redox Dark Si	` '				
	lucky Mineral (S1)			Depleted Dark		7)		<sup>3</sup> Indic	ators of hydrophytic vegetation and
-	leyed Matrix (S4)			Redox Depres	•	,			tland hydrology must be present,
								un	less disturbed or problematic.
Restrictive	Layer (if present)	:							
Type:									
Depth (in	ches):							Hydric S	oil Present? Yes ☐ No ⊠
Remarks: No	o hydric soil indica	tors ident	ified						
HYDROLO	GY								
		s:							
Wetland Hy	drology Indicator		uired: che	eck all that app	olv)			Se	condary Indicators (2 or more required)
Primary Indi	drology Indicator		uired; che			res (B9) (	except ML		condary Indicators (2 or more required)  ☐ Water Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy	drology Indicator		uired; che	eck all that app Water-Si 4A, and 4B	ained Leav	res (B9) ( <b>•</b>	except ML	RA 1, 2,	condary Indicators (2 or more required)  ☐ Water Stained Leaves (B9) (MLRA 1, 2, 44, and 48))
Wetland Hy Primary India Surface High W	drology Indicator cators (minimum o e Water (A1) /ater Table (A2)		uired; che	☐ Water-Si 4A, and 4B ☐ Salt Cru	ained Leav ) st (B11)		except ML	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))  □ Drainage Patterns (B10)
Wetland Hy Primary India Surface High W	drology Indicator cators (minimum o e Water (A1)		uired; che	☐ Water-St 4A, and 4B	ained Leav ) st (B11)		except ML	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
Wetland Hy Primary India Surface High W Saturat Water	drology Indicator cators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1)		uired; che	☐ Water-Si 4A, and 4B ☐ Salt Cru ☐ Aquatic ☐ Hydroge	ained Leav st (B11) Invertebrat n Sulfide C	es (B13) Odor (C1)		RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary India Surface High W Saturat Water I Sedime	drology Indicator cators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		uired; che	Water-Si 4A, and 4B Salt Cru Aquatic Hydroge Oxidized	ained Leav st (B11) Invertebrat n Sulfide C	es (B13) Odor (C1) eres along	g Living Ro	RA 1, 2,	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)
Wetland Hy Primary India Surface High W Saturat Water I Sedime	drology Indicator cators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		uired; che	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presence	ained Leav st (B11) Invertebrat en Sulfide C d Rhizosph e of Reduc	es (B13) Odor (C1) eres along eed Iron (C	g Living Rc C4)	RA 1, 2,	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)
Wetland Hy Primary India Surface High W Saturat Water I Sedime Drift De	drology Indicator cators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4)		uired; che	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presenc	ained Leav st (B11) Invertebrat n Sulfide C d Rhizosph e of Reduc fron Reduc	es (B13) Odor (C1) eres along ed Iron (C	g Living Ro C4) ed Soils (C	RA 1, 2,	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)
Wetland Hy Primary India Surface High W Saturat Water I Sedime Drift De Algal M	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /ater Crust (B4) eposits (B5)		uired; che	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	ained Leav st (B11) Invertebraten Sulfide C d Rhizosphe of Reduction Reductor Stresser	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	oots (C3)	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)
Wetland Hy Primary India Surface High W Saturat Water I Sedime Drift De Algal M Iron De	drology Indicator cators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6)	f one requ		Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	ained Leav st (B11) Invertebrat n Sulfide C d Rhizosph e of Reduc fron Reduc	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	oots (C3)	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)
Wetland Hy Primary India Surface High W Saturat Water I Sedime Drift De Algal M Iron De Surface	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri	f one requal	y (B7)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	ained Leav st (B11) Invertebraten Sulfide C d Rhizosphe of Reduction Reductor Stresser	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	oots (C3)	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)
Wetland Hy Primary India Surface High W Saturat Sedime Drift De Algal M Iron De Surface Inundat Sparsel	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc	f one requal	y (B7)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	ained Leav st (B11) Invertebraten Sulfide C d Rhizosphe of Reduction Reductor Stresser	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	oots (C3)	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)
Wetland Hy Primary India Surface High W Saturat Sedime Drift De Iron De Surface Inundat Sparsel	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations:	f one requal to the second of	y (B7) ce (B8)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	ained Leav st (B11) Invertebrat en Sulfide C d Rhizosph e of Reduc ron Reduc or Stresse explain in R	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro C4) ed Soils (C	oots (C3)	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)
Wetland Hy Primary India Surface High W Saturat Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Water Value	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present?	f one requal Imager ave Surfa	y (B7) ice (B8)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted Other (E	ained Leaversained Leaversained Leaversained Leaversaine Sulfide Control Reduction Reduction Reduction Respective Stressest Explain in Respective Stressest Ex	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro C4) ed Soils (C	oots (C3)	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)
Wetland Hy Primary India Surface High W Saturat Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Water Table	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present?	al Imager ave Surfa Yes  Yes	y (B7) ice (B8) No ⊠ No ⊠	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	ained Leaven st (B11) Invertebraten Sulfide Condens Reduction Redu	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (i emarks)	g Living Ro C4) ed Soils (C D1)( <b>LRR A</b>	PRA 1, 2,	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)
Wetland Hy Primary India Surface High W Saturat Sedime Sedime Drift De Surface Iron De Surface Inundat Sparsel Field Obser Surface Wat Water Table Saturation P	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present?	f one requal Imager ave Surfa	y (B7) ice (B8)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted Other (E	ained Leaven st (B11) Invertebraten Sulfide Condens Reduction Redu	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (i emarks)	g Living Ro C4) ed Soils (C D1)( <b>LRR A</b>	PRA 1, 2,	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)
Wetland Hy Primary India Surface High W Saturat Sedime Sedime Drift De Surface Iron De Surface Sparsel Field Obser Surface Water Table Saturation P (includes car	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present?	al Imager ave Surfa Yes  Yes  Yes  Yes  Yes	y (B7) ce (B8) No <table-cell> No 🖂 No 🖂</table-cell>	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	asined Leaven st (B11) Invertebrate Sulfide Control Reduction Redu	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (i emarks)	g Living Ro (24) ed Soils (C D1)(LRR A	end Hydrol	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)
Wetland Hy Primary India Surface High W Saturat Sedime Sedime Drift De Surface Iron De Surface Sparsel Field Obser Surface Water Table Saturation P (includes car	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present? resent?	al Imager ave Surfa Yes  Yes  Yes  Yes  Yes	y (B7) ce (B8) No <table-cell> No 🖂 No 🖂</table-cell>	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	asined Leaven st (B11) Invertebrate Sulfide Control Reduction Redu	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (i emarks)	g Living Ro (24) ed Soils (C D1)(LRR A	end Hydrol	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)
Wetland Hy Primary India Surface High W Saturat Sedime Drift De Surface Inundat Sparsel Field Obser Surface Wat Water Table Saturation P (includes cal	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present? resent?	al Imager ave Surfa Yes Yes Yes am gauge	y (B7) ice (B8) No ⊠ No ⊠ No ⊠	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	asined Leaven st (B11) Invertebrate Sulfide Control Reduction Redu	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (i emarks)	g Living Ro (24) ed Soils (C D1)(LRR A	end Hydrol	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)
Wetland Hy Primary India Surface High W Saturat Sedime Drift De Surface Inundat Sparsel Field Obser Surface Wat Water Table Saturation P (includes cal	drology Indicator cators (minimum of e Water (A1)  /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeri y Vegetated Conc vations: er Present? Present? present? corded Data (streat	al Imager ave Surfa Yes Yes Yes am gauge	y (B7) ice (B8) No ⊠ No ⊠ No ⊠	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	asined Leaven st (B11) Invertebrate Sulfide Control Reduction Redu	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (i emarks)	g Living Ro (24) ed Soils (C D1)(LRR A	end Hydrol	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)

Project/Site: Weyerhauser		City/C	county	/: <u>Federal W</u>	/ay/King	Sampling Date: 4/9/	16
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: EL	-WET1
Investigator(s): Richard Tveten				Section, To	wnship, Range: Section 16	3, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	ef (concave,	convex, none): convex	Slope	(%): <u>5</u>
Subregion (LRR): <u>LRR A</u>	_ Lat: 47.30	09049	)		Long: <u>-122.297756</u>	Datum: !	NAD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8							
Are climatic / hydrologic conditions on the site typical for this	time of vea	ır? Ye	es 🏻	No □ (If	f no. explain in Remarks.)		
Are Vegetation No, Soil No, or Hydrology No significantly di	-				ımstances" present? Yes	⊠ No □	
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map s							ures. etc.
	<u>g</u>		<b>P</b>	3 po			00, 0101
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			Is th	e Sampled	Area		
Wetland Hydrology Present? Yes ☒ No ☐			with	in a Wetlan	nd? Yes⊠ No	) <b></b>	
Remarks:							
<b>VEGETATION – Use scientific names of plant</b>	s.						
T. 0 (D	Absolute			Indicator	Dominance Test works	heet:	
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Spe		(4)
1. Fraxinus latifolia					That Are OBL, FACW, or	FAC: <u>2</u>	(A)
3.					Total Number of Dominal Species Across All Strata		(B)
4.							(b)
	40				Percent of Dominant Spe That Are OBL, FACW, or		(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)							
1. Rubus spectabilis	35	<u>Y</u>		<u>FAC</u>	Prevalence Index works		
2					Total % Cover of:  OBL species		
3. 4.					FACW species		
5.					FAC species		
	35				FACU species		
Herb Stratum (Plot size: 5ft)					UPL species	x 5 =	
1. None					Column Totals:	(A)	(B)
2.					Prevalence Index -	= B/A =	
3. 4.					Hydrophytic Vegetation		<u> </u>
5.					□ Dominance Test is > !		
6.					 ☐ Prevalence Index is ≤	≤3.0¹	
7.	·				☐ Morphological Adapta		
8.						or on a separate she	,
	0	= To	otal C	over	Problematic Hydroph	ytic Vegetation' (Ex	(plain)
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil a	and wetland hydrolc	av must
1. None					be present, unless distur	bed or problematic.	gy must
2	0		ntal C	over	Hydrophytic		
0. B 0 1. H 1. S					Vegetation	M N- □	
	er of Biotic (	rust _			Present? Yes	⊠ No □	
Remarks:							

Project/Site: Weyerhaeuser		City/Cou	nty: <u>Federal V</u>	Vay/King	Sar	npling Date: <u>4/9/16</u>
Applicant/Owner: Federal Way Campus, LLC				State: WA	Sar	npling Point: EM-UPL1
Investigator(s): Richard Tveten			Section, To	ownship, Range: <u>Secti</u>	on 16, T2	21N, R4E
Landform (hillslope, terrace, etc.): Glacial till plain						
Subregion (LRR): LRR A						
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8						
Are climatic / hydrologic conditions on the site typical for this						140110
	-					No 🗆
Are Vegetation No, Soil No, or Hydrology No significantly d				umstances" present?		NO 🗀
Are Vegetation No, Soil No, or Hydrology No naturally problems	ematic?	(If ne	eeded, explair	any answers in Rem	arks.)	
SUMMARY OF FINDINGS - Attach site map	showing	sampl	ing point l	ocations, transe	cts, imp	portant features, etc
Hydrophytic Vegetation Present? Yes ☐ No ☒		la la	the Compled	Avoc		
Hydric Soil Present? Yes ☐ No ☒			the Sampled ithin a Wetlar		] No 🖂	
Wetland Hydrology Present? Yes ☐ No ☒		W .	iliiiii a vveliai	iu: res _	] 140 🖂	
Remarks:		•				
<b>VEGETATION – Use scientific names of plan</b>	ts.					
	Absolute	Domina	ant Indicator	Dominance Test w	orkshee	t:
Tree Stratum (Plot size: <u>30ft</u> )			s? Status	Number of Dominar		
Pseudotsuga menziesii				That Are OBL, FAC	W, or FA	C: <u>3</u> (A)
2. Thuja plicata				Total Number of Do	minant	
3. Fraxinus excelsior	35	<u>Y</u>	<u>NL</u>	Species Across All	Strata:	<u>8</u> (B)
4.	-			Percent of Dominar	t Species	3
Sapling/Shrub Stratum (Plot size: 15ft)	70	= Total	l Cover			C: <u>37.5</u> (A/B)
1. Oemleria cerasiformis	<u>15</u>	Υ	FACU	Prevalence Index v	vorkshe	et:
Rubus spectabilis				Total % Cover	of:	Multiply by:
3. Acer circinatum						x 1 =
4.						x 2 =
5.						x 3 =
	30	= Total	l Cover	FACU species		x 4 =
Herb Stratum (Plot size: 5ft)				UPL species		x 5 =
Polystichum munitum	20	<u>Y</u>	FACU	Column Totals:		(A)(B)
2. Rubus ursinus		<u>Y</u>			. 5/	•
3. Rubus armeniacus	<u>10</u>	<u>Y</u>	<u>FAC</u>			A =
4				Hydrophytic Veget  Dominance Tes		
5		. ———		☐ Prevalence Inde		
6.	<u> </u>			I <u> </u>		ns1 (Provide supporting
7.	-					n a separate sheet)
8	40			☐ Problematic Hyd	drophytic	Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 15ft)	40	= 10tal	over			
1. None						wetland hydrology must
2.				be present, unless of	listurbed	or problematic.
	0	= Total	l Cover	Hydrophytic		
9/ Para Cround in Horb Stratum CO	or of Diotic (	oruot		Vegetation Present?	Yes □	No ⊠
% Bare Ground in Herb Stratum 60 % Cov.  Remarks:	er of Biotic (	Jiust		i resent!	. 63 🗀	
Fraxinus excelsior (European ash) is not listed in the US, the	out is recogr	nized as	a wetland tree	e in its home territory.		

Profile Desc	N.A - 1-2-			D		_			
Depth (inches)	Matrix Color (moist)	%	Colo	r (moist)	ox Feature %	s Type¹	Loc <sup>2</sup>	Texture	Remarks
0-1									Duff
1-3	10YR 3/3	100						Loam	_
3-7	10YR 6/3	90	10YI	R 5/8	10			Silt	Prominent feature
7-16	10YR 3/3	100							
· . · ·									
						-		-	
	-								
									<del>-</del>
1Typo: C-C	oncentration, D=D	oplotion		uood Matrix C		d or Coot		roino 21	Location: PL=Pore Lining, M=Matrix.
	Indicators: (App						eu Sanu G		ators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol				Sandy Redox		,			cm Muck (A10)
	ipedon (A2)			Stripped Matrix				☐ Re	ed Parent Material (TF2)
☐ Black His	stic (A3)		□ I	Loamy Mucky	Mineral (F1	(except	MLRA 1))	□ V	ery Shallow Dark Surface (TF12)
_ , ,	n Sulfide (A4)			oamy Gleyed				☐ Ot	her (Explain in Remarks
	Below Dark Surfa	ice (A11)		Depleted Matrix	` '				
	rk Surface (A12)			Redox Dark Si	, ,	<b>-</b> 7\		31	atawa af hardaanka da aa aa tal'aa aa d
-	lucky Mineral (S1) leyed Matrix (S4)			Depleted Dark Redox Depres		7)			ators of hydrophytic vegetation and etland hydrology must be present,
	leyed Matrix (34)			Redux Depres	SIUIIS (FO)				less disturbed or problematic.
Restrictive I	Layer (if present)	<u> </u>							·
Type:									
Depth (inc	ches):							Hydric S	oil Present? Yes ☐ No ⊠
Remarks: It a	appears soils were	disturbe	d from 3-	7", having con	ne from we	land EK.I	No hydric s	oil indicators	s observed.
HYDROLO	GY								
		s:							
Wetland Hyd	drology Indicator		uired; che	eck all that ap	oly)			Se	condary Indicators (2 or more required)
Wetland Hyd			uired; che	eck all that apı □ Water-S	•	res (B9) (	except ML		condary Indicators (2 or more required)  ☐ Water Stained Leaves (B9) (MLRA 1, 2,
Wetland Hyd Primary Indic ☐ Surface	drology Indicator cators (minimum o e Water (A1)		uired; che	☐ Water-Si	ained Leav	res (B9) ( <b>(</b>	except ML	RA 1, 2,	☐ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
Wetland Hyd Primary India □ Surface □ High W	drology Indicator cators (minimum o e Water (A1) dater Table (A2)		uired; che	☐ Water-S 4A, and 4B ☐ Salt Cru	tained Leav ) st (B11)	. , ,	except ML	RA 1, 2,	☐ Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)) ☐ Drainage Patterns (B10)
Wetland Hyd Primary Indid Surface High W Saturat	drology Indicator cators (minimum of Water (A1) dater Table (A2) ion (A3)		uired; che	☐ Water-S  4A, and 4B  ☐ Salt Cru  ☐ Aquatic	rained Leav ) st (B11) Invertebrat	es (B13)	except ML	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))     Drainage Patterns (B10)     Dry-Season Water Table (C2)
Primary India  Surface  High W  Saturat  Water N	cators (minimum of water (A1)  ater Table (A2)  ion (A3)  Marks (B1)		uired; che	☐ Water-S  4A, and 4B  ☐ Salt Cru  ☐ Aquatic  ☐ Hydroge	tained Leav ) st (B11) Invertebrat en Sulfide C	es (B13) Odor (C1)	·	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))      Drainage Patterns (B10)      Dry-Season Water Table (C2)      Saturation Visible on Aerial Imagery (C9)
Wetland Hyd Primary India Surface High W Saturat Water N Sedime	extors (minimum of water (A1)  ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		uired; che	☐ Water-S 4A, and 4B ☐ Salt Cru ☐ Aquatic ☐ Hydroge ☐ Oxidize	tained Leav ) st (B11) Invertebrat en Sulfide C d Rhizosph	es (B13) Odor (C1) eres alon	g Living Ro	RA 1, 2,	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)
Wetland Hyd  Primary India  Surface  High W  Saturat  Water N  Sedime  Drift De	drology Indicator cators (minimum of Water (A1)  dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		uired; che	☐ Water-S 4A, and 4B ☐ Salt Cru ☐ Aquatic ☐ Hydroge ☐ Oxidized ☐ Presence	cained Leav ) st (B11) Invertebrat en Sulfide C d Rhizosph ee of Reduc	es (B13) Odor (C1) eres alon ed Iron (C	g Living Ro	RA 1, 2,	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)
Wetland Hyd  Primary India  Surface  High W  Saturat  Water N  Sedime  Drift De	cators (minimum of Water (A1)  cater Table (A2) cion (A3)  Marks (B1) cent Deposits (B2) ceposits (B3)  lat or Crust (B4)		uired; che	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presenc	rained Leav ) st (B11) Invertebrat en Sulfide C d Rhizosph ee of Reduc Iron Reduc	es (B13) Odor (C1) eres alon ed Iron (C	g Living Ro C4) ed Soils (C	RA 1, 2,	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)
Wetland Hyd  Primary Indice  Surface  High W  Saturat  Water N  Sedime  Drift De  Algal M	drology Indicator cators (minimum of e Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4)		uired; che	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebrat en Sulfide C d Rhizosph ee of Reduc Iron Reduc or Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	RA 1, 2,	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)
Wetland Hyd Primary India Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface	extraction description of the control of the contro	f one req		Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebrat en Sulfide C d Rhizosph ee of Reduc Iron Reduc	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro 24) ed Soils (C	RA 1, 2,	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)
Wetland Hyden	drology Indicator cators (minimum of e Water (A1)  dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric	f one req	y (B7)	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebrat en Sulfide C d Rhizosph ee of Reduc Iron Reduc or Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro 24) ed Soils (C	RA 1, 2,	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)
Wetland Hyd Primary Indic Surface High W Saturat Water I Sedime Drift De Algal M Iron De Surface Inundati	drology Indicator cators (minimum of e Water (A1)  dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric y Vegetated Conc	f one req	y (B7)	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebrat en Sulfide C d Rhizosph ee of Reduc Iron Reduc or Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro 24) ed Soils (C	RA 1, 2,	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)
Wetland Hyden	drology Indicator cators (minimum of e Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) don Visible on Aeric y Vegetated Conceptations:	f one req	y (B7) ace (B8)	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidizee Presenc Recent Stunted Other (E	asined Leave st (B11) Invertebrate en Sulfide C d Rhizosphere of Reduction fron Reduction Stresse explain in R	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro 24) ed Soils (C	RA 1, 2,	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)
Wetland Hyd Primary India Surface High W Saturat Water N Sedime Drift De Surface Iron De Surface Inundati Sparsel	drology Indicator cators (minimum of the Water (A1)  dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aericy y Vegetated Concevations: er Present?	f one req al Imager ave Surfa Yes □	y (B7) ace (B8) No ⊠	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted Other (E	asined Leave st (B11) Invertebrate en Sulfide C d Rhizosph ee of Reduction Reduction Reduction Reduction Reduction Stresse Explain in Reduction Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro 24) ed Soils (C	RA 1, 2,	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)
Wetland Hyd Primary India Surface High W Saturat Water N Sedime Drift De Algal M Iron De Surface Inundati Sparsel Field Obser	drology Indicator cators (minimum of e Water (A1)  later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric y Vegetated Concevations: er Present? Present?	f one req	y (B7) ace (B8)	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidizee Presenc Recent Stunted Other (E	rained Leave  st (B11)  Invertebrate  A Sulfide Condense of Reduct  Iron Reduct  Ir	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (24) ed Soils (C D1)(LRR A	RA 1, 2,	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)
Wetland Hyder Primary India   Surface   High W   Saturate   Sedime   Drift Decent   Iron Decent   Surface   Surface   Surface   Surface   Surface   Water Table   Saturation Principudes cap	drology Indicator cators (minimum of e Water (A1)  dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric y Vegetated Concevations: er Present? Present? resent?	al Imager ave Surfa Yes  Yes  Yes  Yes  Yes	y (B7) ace (B8) No 🛭 No 🗷 No 🗷	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	asined Leave  st (B11)  Invertebrate  A Sulfide Control  Reduct  Iron Reduct  Iron Reduct  Iron Reduct  Explain in Reduct  Expl	es (B13) Odor (C1) eres alonged Iron (Cition in Till d Plants (emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	RA 1, 2,	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)
Wetland Hyder Primary India   Surface   High W   Saturate   Sedime   Drift Decent   Iron Decent   Surface   Surface   Surface   Surface   Surface   Water Table   Saturation Principudes cap	drology Indicator cators (minimum of the Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) deposits (B3) dat or Crust (B4) deposits (B5) de Soil Cracks (B6) dion Visible on Aericy Vegetated Concervations: er Present? Present?	al Imager ave Surfa Yes  Yes  Yes  Yes  Yes	y (B7) ace (B8) No 🛭 No 🗷 No 🗷	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	asined Leave  st (B11)  Invertebrate  A Sulfide Control  Reduct  Iron Reduct  Iron Reduct  Iron Reduct  Explain in Reduct  Expl	es (B13) Odor (C1) eres alonged Iron (Cition in Till d Plants (emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	RA 1, 2,	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)
Wetland Hyd Primary Indice Surface High W Saturat Water N Sedime Drift De Surface Inundati Sparsel Field Obser Surface Water Table Saturation Pe (includes cap Describe Rec	drology Indicator cators (minimum of eathers (minimum of eathers (Mater (A1))  dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) don Visible on Aericy Vegetated Concevations: er Present? Present? present? present? corded Data (streat	al Imager ave Surfa Yes  Yes  Yes  Yes  m gauge	y (B7) ace (B8) No ⊠ No ⊠ No ⊠	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidizee Recent Stunted Other (E	asined Leave  st (B11)  Invertebrate  A Sulfide Control  Reduct  Iron Reduct  Iron Reduct  Iron Reduct  Explain in Reduct  Expl	es (B13) Odor (C1) eres alonged Iron (Cition in Till d Plants (emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	RA 1, 2,	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)
Wetland Hyd Primary Indice Surface High W Saturat Water N Sedime Drift De Surface Iron De Surface Inundati Sparsel Field Obser Surface Wate Water Table Saturation Pe (includes cap Describe Rec	drology Indicator cators (minimum of e Water (A1)  dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) ion Visible on Aeric y Vegetated Concevations: er Present? Present? resent?	al Imager ave Surfa Yes  Yes  Yes  Yes  m gauge	y (B7) ace (B8) No ⊠ No ⊠ No ⊠	Water-S 4A, and 4B Salt Cru Aquatic Hydroge Oxidizee Recent Stunted Other (E	asined Leave  st (B11)  Invertebrate  A Sulfide Control  Reduct  Iron Reduct  Iron Reduct  Iron Reduct  Explain in Reduct  Expl	es (B13) Odor (C1) eres alonged Iron (Cition in Till d Plants (emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	RA 1, 2,	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)

Project/Site: Weyerhaeuser	oject/Site: Weyerhaeuser City/County: Federal Way/King Sampling Date: 4/9/16							
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: EM-	-WET1	
Investigator(s): Richard Tveten			;	Section, To	wnship, Range: Section 16	3, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief	f (concave,	convex, none): Concave	Slope (	%): <u>5</u>	
Subregion (LRR): <u>LRR A</u>	_ Lat: 47.30	08991	1		Long: -122.298042	Datum: N	IAD83	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation No, Soil No, or Hydrology No significantly di	-				imstances" present? Yes	⊠ No □		
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map s							res. etc.	
	<u>_</u>			<b>,</b>			,	
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			Is the	e Sampled	Area			
Wetland Hydrology Present? Yes ☒ No ☐			withi	n a Wetlan	d? Yes ⊠ No	· 🗆		
Remarks:								
<b>VEGETATION – Use scientific names of plant</b>	s.							
T. 0 (D	Absolute			Indicator	Dominance Test worksl	heet:		
Tree Stratum (Plot size: <u>30ft</u> )	% Cover				Number of Dominant Spe	cies	(4)	
1. None					That Are OBL, FACW, or	· FAC: 2	_ (A)	
3.					Total Number of Dominar		(D)	
4.					Species Across All Strata	a: <u>2</u>	(B)	
	0				Percent of Dominant Spe That Are OBL, FACW, or		(A/B)	
Sapling/Shrub Stratum (Plot size: 15ft)							_ (//////	
1. Spiraea douglasii					Prevalence Index works			
2. Rubus spectabilis					Total % Cover of:			
3. 4.					OBL species FACW species			
					FAC species			
5.	70				FACU species			
Herb Stratum (Plot size: 5ft)		-			UPL species			
1. None					Column Totals:	(A)	(B)	
2.					Description of Index	D/A		
3.					Hydrophytic Vegetation	= B/A =	=	
4.					Dominance Test is >			
5 6					☐ Prevalence Index is ≤			
7.					─ Morphological Adapta	ations¹ (Provide supr	oorting	
8.						or on a separate she	,	
	0	= T	otal Co	over	☐ Problematic Hydroph	ytic Vegetation <sup>1</sup> (Exp	olain)	
Woody Vine Stratum (Plot size: 15ft)					11	and well and broden law		
1. None					<sup>1</sup> Indicators of hydric soil a be present, unless disturb	and wetland nydrolog bed or problematic.	gy must	
2.			otal Ca		Hydrophytic			
	0				Vegetation			
	er of Biotic C	Crust	-		Present? Yes	⊠ No □		
Remarks:								

	ription: (Descri		aeptn nee		ox Featur		or confirm	n the absence	e or indicators.)
Depth (inches)	Matrix Color (moist)		Color	(moist)	<u>%</u>	<u>Type</u> 1	Loc <sup>2</sup>	Texture	Remarks
0-2									Duff
2-11	10YR 3/2	100						Mucky loam	
			EVD 5	:/6	20		N4	-	
<u>11-16</u>	10YR 5/2	<u>80</u>	<u>5YR 5</u>	0/6	<u>20</u>		<u>M</u>	silt	gravelly
·									·
									·
¹Type: C=C	oncentration, D=D	Depletion,	RM=Redu	ced Matrix, C	S=Covere	ed or Coat	ed Sand G	rains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
	Indicators: (App								ors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	(A1)		☐ Sa	andy Redox (	(S5)			☐ 2 cr	m Muck (A10)
	ipedon (A2)			ripped Matrix					Parent Material (TF2)
☐ Black His	, ,			amy Mucky			MLRA 1))		ry Shallow Dark Surface (TF12)
	n Sulfide (A4) I Below Dark Surf	000 (011)		amy Gleyed pleted Matrix		<u>?)</u>		∐ Othe	er (Explain in Remarks
	rk Surface (A12)	ace (ATT)		edox Dark Su	` '	)			
	lucky Mineral (S1)	)		epleted Dark	,	,		<sup>3</sup> Indicat	tors of hydrophytic vegetation and
-	leyed Matrix (S4)			edox Depres:					and hydrology must be present,
								unle	ss disturbed or problematic.
Restrictive	Layer (if present)	):							
Type:									
Depth (in	ches):							Hydric Soi	il Present? Yes ⊠ No □
Remarks:									
HYDROLO	GY								
Wetland Hy	drology Indicato	rs:							
Primary India	cators (minimum o	of one requ	uired; ched	k all that app	oly)			Seco	ondary Indicators (2 or more required)
☐ Surface	e Water (A1)			☐ Water-St	tained Lea	aves (B9) (	except ML	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2,
_				4A, and 4B)	<b>'</b>			4.	A, and 4B))
_ •	ater Table (A2)			☐ Salt Cru	, ,				- 5 ,
Saturat     Saturat				Aquatic					Dry-Season Water Table (C2)
☐ Water I	` ,			Hydroge		, ,			Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)						g Living Ro	00ts (C3)	Geomorphic Position (D2)
	eposits (B3) lat or Crust (B4)			☐ Recent		ction in Til	,		Shallow Aquitard (D3) FAC-Neutral Test (D5)
_	eposits (B5)						(D1)( <b>LRR</b>	,	Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)					Remarks)	(D 1)( <b>L</b> 11117		Frost-Heave Hummocks (D7)
	ion Visible on Aer		v (B7)					_	
	y Vegetated Cond								
Field Obser	,	ave ouna	(50)						
Surface Wat		Yes 🗌	No 🖂	Depth (inche	76).				
Water Table		Yes ⊠		Depth (inche	,				
Saturation P		Yes ⊠	No 🗆	Depth (inche			Wet	land Hydrolo	gy Present? Yes ⊠ No □
(includes car		100 🔼	110 🗀	Dopur (mone	,5). <u>0</u>		****	iana riyarolo	gyrresent. 105 🖂 No 🗀
Describe Re	corded Data (stre	am gauge	, monitorin	g well, aerial	l photos, p	revious in	spections),	if available:	
Remarks:									

Project/Site: Weyerhaeuser	roject/Site: WeyerhaeuserCity/County: F						
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: FA-l	JPL1
Investigator(s): Richard Tveten			Sec	ction, Tov	vnship, Range: <u>Section 1</u>	6, T21N, R4E	
Landform (hillslope, terrace, etc.): Till Plain		Loca	al relief (c	concave, o	convex, none): Convex	Slope (%	%): <u>10</u>
Subregion (LRR): <u>LRR A</u>	_ Lat: <u>47.3</u>	10939	9		Long: <u>-122.291696</u>	Datum: <u>N</u>	AD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	pes			NWI classifica	tion: None	
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	es 🛛 N	No □ (If	no, explain in Remarks.)		
Are Vegetation $\underline{\text{No}}$ , Soil $\underline{\text{No}}$ , or Hydrology $\underline{\text{No}}$ significantly di	sturbed?	A	Are "Norm	mal Circur	nstances" present? Yes	s ⊠ No □	
Are Vegetation No, Soil No, or Hydrology No naturally proble	ematic?	(It	f needed,	l, explain	any answers in Remarks	.)	
SUMMARY OF FINDINGS - Attach site map s	showing	sam	pling p	ooint lo	cations, transects,	important featu	res, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒			la tha C	emmlad :	A		
Hydric Soil Present? Yes ☐ No ☒				Sampled <i>I</i> a Wetland	_	o 🖾	
Wetland Hydrology Present? Yes ⊠ No □							
Remarks: Record rainfall in recent months.							
VEGETATION – Use scientific names of plant	s						
	Absolute	Dom	ninant Inc	dicator	Dominance Test works	sheet:	
Tree Stratum (Plot size: 30ft)	% Cover	Spe	cies? S	Status_	Number of Dominant Sp	ecies	
1. Alnus rubra					That Are OBL, FACW, o	or FAC: 2	_ (A)
2.					Total Number of Domina		<b>(5</b> )
3. 4.					Species Across All Strat	a: <u>4</u>	_ (B)
4.	40				Percent of Dominant Sp That Are OBL, FACW, o		(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)	<u></u>		0101				_ (A/b)
1. Cytisus scoparius					Prevalence Index work		
2. Rubus armeniacus						Multiply by:	
3. 4.					OBL species		
						x 3 = <u>180</u>	
5.	80				FACU species 60		
Herb Stratum (Plot size: 5ft)					UPL species		
1. Rubus ursinus	60	<u>Y</u>	<u>FA</u>	ACU_	Column Totals: 120	(A) <u>420</u>	(B)
2					Prevalence Index	- R/Δ - 3.5	
3. 4.					Hydrophytic Vegetatio		
5.					☐ Dominance Test is >		
6.					☐ Prevalence Index is	≤3.0 <sup>1</sup>	
7.	· ·				☐ Morphological Adapt		
8						or on a separate shee	•
W 1 1/2 0 1 (D) 1 1 15(1)	60	= To	otal Cove	er	☐ Problematic Hydropl	nytic vegetation (Exp	iain)
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil	and wetland hydrolog	v must
1. None					be present, unless distu	rbed or problematic.	,
	0	= To	otal Cove	er -	Hydrophytic		
% Bare Ground in Herb Stratum 40 % Cove	er of Biotic (				Vegetation Present? Yes	s □ No ⊠	
Remarks:	or Diotic C	Jiuol _		_			

Depth	Matrix			Pod	ox Feature	•		n the absenc	
(inches)	Color (moist)	%	Colo	r (moist)	%		Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 4/2	100						Gravel loam	1
4-16	10YR 5/2	100						Gravel loam	
								-	<del></del>
			_		_				
						· ——			
	-								_
								-	
								-	_
<sup>1</sup> Type: C=C	oncentration, D=D	epletion,	RM=Red	uced Matrix, C	S=Covered	d or Coate	ed Sand G	rains. <sup>2</sup> L	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRR	s, unless othe	erwise not	ed.)		Indica	tors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	` '			Sandy Redox (					cm Muck (A10)
	pipedon (A2)		_	Stripped Matrix	` '				d Parent Material (TF2)
☐ Black Hi	` '			oamy Mucky		(except	MLRA 1))	· <del></del>	ry Shallow Dark Surface (TF12)
	en Sulfide (A4) d Below Dark Surfa	οςς (Λ11)		camy Gleyed epleted Matrix	. ,			☐ Oth	ner (Explain in Remarks
	ark Surface (A12)	ice (ATT)		epieted Matrix Redox Dark St	` '				
	Mucky Mineral (S1)			Depleted Dark	, ,	7)		<sup>3</sup> Indica	itors of hydrophytic vegetation and
	Bleyed Matrix (S4)		□ F	Redox Depress	sions (F8)				land hydrology must be present,
								unle	ess disturbed or problematic.
Restrictive	Layer (if present)	:							
Type:									
Depth (in	ches):							Hydric Sc	oil Present? Yes □ No ⊠
Remarks:								•	
HYDROLO	GY								
Wetland Hy	drology Indicator	s:							
Drimary Indi									
Filliary Inui	cators (minimum o	f one requ	uired; che	ck all that app	oly)			Sec	ondary Indicators (2 or more required)
	cators (minimum o e Water (A1)	f one requ	uired; che	eck all that app Water-St 4A, and 4B)	ained Leav	res (B9) (e	except ML	RA 1, 2,	ondary Indicators (2 or more required)  Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
☐ Surface	e Water (A1)  Vater Table (A2)	f one requ	uired; che	☐ Water-St 4A, and 4B) ☐ Salt Cru	ained Leav st (B11)		except ML	RA 1, 2, [ 4	☐ Water Stained Leaves (B9) (MLRA 1, 2, IA, and 4B)) ☐ Drainage Patterns (B10)
☐ Surface	e Water (A1)	f one requ	uired; che	☐ Water-St 4A, and 4B)	ained Leav st (B11)		except ML	RA 1, 2, [ 4	Water Stained Leaves (B9) (MLRA 1, 2, IA, and 4B))
☐ Surface ☐ High W ☐ Saturar ☐ Water	e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1)	f one requ	uired; che	Water-St 4A, and 4B) Salt Cru Aquatic Hydroge	ained Leav st (B11) Invertebrat n Sulfide C	es (B13) Odor (C1)		RA 1, 2, [ 4 [ [	<ul> <li>□ Water Stained Leaves (B9) (MLRA 1, 2, 1A, and 4B))</li> <li>□ Drainage Patterns (B10)</li> <li>□ Dry-Season Water Table (C2)</li> <li>□ Saturation Visible on Aerial Imagery (C9)</li> </ul>
☐ Surface ☐ High W ☐ Satura ☐ Water ☐ Sedime	e Water (A1)  /ater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2)	f one requ	uired; che	Water-St 4A, and 4B) Salt Cru Aquatic Hydroge Oxidized	ained Leav st (B11) Invertebrat n Sulfide C	es (B13) Odor (C1) eres alonç	g Living Ro	RA 1, 2, [ 4 [ [	Water Stained Leaves (B9) (MLRA 1, 2, IA, and 4B)) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
☐ Surface ☐ High W ☐ Satura ☐ Water ☐ Sedime	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)	f one requ	uired; che	Water-St 4A, and 4B; Salt Cru Aquatic Hydroge Oxidized Presence	ained Leav st (B11) Invertebrat in Sulfide C I Rhizosphi e of Reduc	es (B13) Odor (C1) eres along ed Iron (C	g Living Ro 34)	RA 1, 2, [ 4 [ [ ] oots (C3) [	Water Stained Leaves (B9) (MLRA 1, 2, 14, and 4B))      Drainage Patterns (B10)      Dry-Season Water Table (C2)      Saturation Visible on Aerial Imagery (C9)      Geomorphic Position (D2)      Shallow Aquitard (D3)
Surface High W Satura Water Sedime Drift De	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Vat or Crust (B4)	f one requ	uired; che	Water-St 4A, and 4B; Salt Cru Aquatic Hydroge Oxidized Presenc	ained Leav st (B11) Invertebrat sn Sulfide C I Rhizosph e of Reduc ron Reduc	es (B13) Odor (C1) eres alonç ed Iron (C	g Living Ro 24) ed Soils (C	RA 1, 2, [ 4 [ cots (C3) [ C6) [	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Surface High W Saturar Water Sedime Drift De Algal M	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5)	f one requ	uired; che	Water-St 4A, and 4B; Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted	ained Leavest (B11) Invertebrate Sulfide College Reduction Reduction Stresser	es (B13) Odor (C1) eres along ed Iron (C tion in Till	g Living Ro 24) ed Soils (C	RA 1, 2, [4 6 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	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)
☐ Surface ☐ High W ☐ Saturar ☐ Water ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6)			Water-St 4A, and 4B; Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted	ained Leav st (B11) Invertebrat sn Sulfide C I Rhizosph e of Reduc ron Reduc	es (B13) Odor (C1) eres along ed Iron (C tion in Till	g Living Ro 24) ed Soils (C	RA 1, 2, [4 6 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Surface High W Satura Water Sedime Drift De Algal M Surface	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Vat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeric	al Imager	y (B7)	Water-St 4A, and 4B; Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted	ained Leavest (B11) Invertebrate Sulfide College Reduction Reduction Stresser	es (B13) Odor (C1) eres along ed Iron (C tion in Till	g Living Ro 24) ed Soils (C	RA 1, 2, [4 6 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	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)
☐ Surface ☐ High W ☐ Saturar ☐ Water ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aericly	al Imager	y (B7)	Water-St 4A, and 4B; Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted	ained Leavest (B11) Invertebrate Sulfide College Reduction Reduction Stresser	es (B13) Odor (C1) eres along ed Iron (C tion in Till	g Living Ro 24) ed Soils (C	RA 1, 2, [4 6 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	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)
☐ Surface ☐ High W ☐ Saturar ☐ Water ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Vat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aericly Vegetated Concervations:	al Imager ave Surfa	y (B7) ce (B8)	Water-St 4A, and 4B; Salt Cru Aquatic Hydroge Oxidized Presenc Recent I Stunted Other (E	ained Leav st (B11) Invertebrat in Sulfide C I Rhizosphi e of Reduct ron Reduct or Stressed explain in R	es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	g Living Ro 24) ed Soils (C	RA 1, 2, [4 6 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	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)
☐ Surface ☐ High W ☐ Saturat ☐ Water ☐ Sedime ☐ Drift De ☐ Algal M ☐ Iron De ☐ Surface ☐ Inundat ☐ Sparsel  Field Obser Surface Water	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Vat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aericly Vegetated Concervations: ter Present?	al Imager ave Surfa Yes □	y (B7) ce (B8)	Water-St 4A, and 4B, Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted Other (E	ained Leavenst (B11) Invertebraten Sulfide Cold Rhizosphere of Reduction Reduction Stressed (Explain in Research):	es (B13) Odor (C1) eres along ed Iron (C tion in Tilli d Plants (I emarks)	g Living Ro 24) ed Soils (C	RA 1, 2, [4 6 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	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)
Surface  High W Saturar  Water  Sedime Drift De Algal M Iron De Surface Inundat Sparsel  Field Obser Surface Water Water Table	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aericly Vegetated Concevations: ter Present?	al Imager ave Surfa Yes □ Yes □	y (B7) ce (B8) No 🏻	Water-St 4A, and 4B, Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted Other (E	ained Leavest (B11) Invertebraten Sulfide College of Reduction Reduction Stressed Explain in Responses:	es (B13) Odor (C1) eres along ed Iron (C tion in Tilli d Plants (I emarks)	g Living Ro (4) ed Soils (C D1)(LRR A	RA 1, 2, [44] [50   [66] [67] [68] [68] [68] [68] [68] [68] [68] [68	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Surface  High W Saturar  Water  Sedime  Drift De  Algal M Iron De  Surface  Inundat  Sparsel  Field Obser  Surface Water  Water Table  Saturation P	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aericly Vegetated Concevations: ter Present? Present?	al Imager ave Surfa Yes □	y (B7) ce (B8)	Water-St 4A, and 4B, Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted Other (E	ained Leavest (B11) Invertebraten Sulfide College of Reduction Reduction Stressed Explain in Responses:	es (B13) Odor (C1) eres along ed Iron (C tion in Tilli d Plants (I emarks)	g Living Ro (4) ed Soils (C D1)(LRR A	RA 1, 2, [44] [50   [66] [67] [68] [68] [68] [68] [68] [68] [68] [68	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)
Surface  High W Saturat  Water  Sedime  Drift De  Algal M Iron De  Surface  Inundat  Sparsel  Field Obser  Surface Wat  Water Table  Saturation P (includes cal	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aericly Vegetated Concevations: ter Present?	al Imager ave Surfa Yes □ Yes ⊠	y (B7) ce (B8) No 🖾 No 🗔	Water-St 4A, and 4B, Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted Other (E	ained Leavest (B11) Invertebraten Sulfide College of Reduction Reduction Stressed (xplain in Res):  as):  as):  as): 2	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (I emarks)	g Living Rd (4) ed Soils (C D1)(LRR A	RA 1, 2, [4    (1)   (2)   (3)   (3)   (4)	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Surface  High W Saturat  Water  Sedime  Drift De  Algal M Iron De  Surface  Inundat  Sparsel  Field Obser  Surface Wat  Water Table  Saturation P (includes cal	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Vat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aericly Vegetated Concervations: ter Present? Present? Present? pillary fringe)	al Imager ave Surfa Yes □ Yes ⊠	y (B7) ce (B8) No 🖾 No 🗔	Water-St 4A, and 4B, Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted Other (E	ained Leavest (B11) Invertebraten Sulfide College of Reduction Reduction Stressed (xplain in Res):  as):  as):  as): 2	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (I emarks)	g Living Rd (4) ed Soils (C D1)(LRR A	RA 1, 2, [4    (1)   (2)   (3)   (3)   (4)	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Surface  High W Saturar  Water  Sedime  Drift De  Algal M Iron De  Surface  Inundat  Sparsel  Field Obser  Surface Wat  Water Table  Saturation P (includes cal  Describe Re	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Vat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aericly Vegetated Concervations: ter Present? Present? Present? pillary fringe)	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠ am gauge	y (B7) ce (B8) No ⊠ No ⊡ No □	Water-St 4A, and 4B, Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted Other (E	ained Leavest (B11) Invertebraten Sulfide College of Reduction Reduction Stressed (xplain in Res):  as):  as):  as): 2	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (I emarks)	g Living Rd (4) ed Soils (C D1)(LRR A	RA 1, 2, [4    (1)   (2)   (3)   (3)   (4)	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)
Surface  High W Saturar  Water  Sedime  Drift De  Algal M Iron De  Surface  Inundat  Sparsel  Field Obser  Surface Wat  Water Table  Saturation P (includes cal  Describe Re	e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Concervations: ter Present? Present? pillary fringe) ecorded Data (streat	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠ am gauge	y (B7) ce (B8) No ⊠ No ⊡ No □	Water-St 4A, and 4B, Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted Other (E	ained Leavest (B11) Invertebraten Sulfide College of Reduction Reduction Stressed (xplain in Res):  as):  as):  as): 2	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (I emarks)	g Living Rd (4) ed Soils (C D1)(LRR A	RA 1, 2, [4    (1)   (2)   (3)   (3)   (4)	Water Stained Leaves (B9) (MLRA 1, 2, IA, 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)

Project/Site: Weyerhaeuser	ite: WeyerhaeuserCity/County: Federal Way/King Sampling Date:4/16/16								
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point:	FA-WET1		
Investigator(s): Richard Tveten				Section, To	wnship, Range: Section 1	6, T21N, R4E			
Landform (hillslope, terrace, etc.): Till Plain		Loca	al relie	ef (concave,	convex, none): Concave	Slo	pe (%): <u>5</u>		
Subregion (LRR): <u>LRR A</u>	Lat: 47.3	10939	)		Long: -122.293696	Datu	m: <u>NAD83</u>		
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	pes			NWI classifica	tion: None			
Are climatic / hydrologic conditions on the site typical for this									
Are Vegetation No, Soil No, or Hydrology No significantly di	-				ımstances" present? Yes				
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks				
SUMMARY OF FINDINGS – Attach site map					-		atures. etc.		
				· ·	,		,		
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐				e Sampled		_			
Wetland Hydrology Present? Yes ⊠ No □			with	in a Wetlan	nd? Yes⊠ N	o 🗌			
Remarks:		<u> </u>							
<b>VEGETATION – Use scientific names of plant</b>	ts.								
Trac Stratum (Plat size: 20th)	Absolute			Indicator	Dominance Test works	sheet:			
Tree Stratum (Plot size: 30ft)  1. Alnus rubra	% Cover				Number of Dominant Sp That Are OBL, FACW, o	ecies	(A)		
2.							(A)		
3.					Total Number of Domina Species Across All Strat		(B)		
4.							(=)		
	30	= To	otal C	over	Percent of Dominant Sp That Are OBL, FACW, o		(A/B)		
Sapling/Shrub Stratum (Plot size: 15ft)		.,			Prevalence Index work	-			
1. Rubus spectabilis					Total % Cover of:		v bv:		
3.					OBL species				
4.					FACW species				
5.					FAC species				
	60				FACU species	x 4 =			
Herb Stratum (Plot size: 5ft)					UPL species				
1. Alopecurus sp	30			FAC	Column Totals:	(A)	(B)		
Epilobium ciliatum ssp. watsonii  3.				FACW	Prevalence Index	= B/A =			
4.					Hydrophytic Vegetatio	·			
5.									
6.					☐ Prevalence Index is	≤3.0 <sup>1</sup>			
7					☐ Morphological Adapt				
8					data in Remarks  Problematic Hydropl	or on a separate	,		
MandaVine Otesture (Blateine 450)	32	= To	otal C	over		lytic vegetation	(Explain)		
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil	and wetland hvd	rology must		
1. None					be present, unless distu	rbed or problema	tic.		
	0	= To	otal C	over	Hydrophytic				
0/ Para Cround in Hosh Stratum 60					Vegetation Present? Yes	s⊠ No □			
% Bare Ground in Herb Stratum 68 % Cover Remarks:	er of Biotic (	Just _			. resent: Tes				
Nomano.									

	cription: (Describ		aopiii iiooc			_			
Depth (inches)	Matrix Color (moist)	%	Color (		ox Feature: %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-1									Litter
	10YR 2/2	100						Sandy loam	
1-3								Sandy loam	· ·
3-18	10YR 6/1	100						Sandy loam	
								-	
	-				_				
			_						
¹Type: C=C	oncentration, D=D	enletion	RM-Reduc	ed Matrix C	S=Covered	d or Coate	ed Sand G	rains <sup>2</sup> l c	ocation: PL=Pore Lining, M=Matrix.
	Indicators: (App			•			a cana c		tors for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		☐ Sai	ndy Redox (	S5)			☐ 2 ci	m Muck (A10)
☐ Histic Ep	pipedon (A2)			pped Matrix				Red	Parent Material (TF2)
☐ Black His	` '			amy Mucky I		(except	MLRA 1))	<del></del>	ry Shallow Dark Surface (TF12)
	n Sulfide (A4)	(*)		my Gleyed I	, ,			☐ Oth	er (Explain in Remarks
	d Below Dark Surfa ark Surface (A12)	ice (A11)		leted Matrix dox Dark Su	• •				
	fucky Mineral (S1)			oleted Dark	, ,	7)		<sup>3</sup> Indicat	tors of hydrophytic vegetation and
	Bleyed Matrix (S4)			dox Depress	•	.,			and hydrology must be present,
-								unle	ess disturbed or problematic.
Restrictive	Layer (if present)								
Type:									
Depth (in	ches):							Hydric So	il Present? Yes 🛛 No 🗌
Remarks:									
HYDROLO	GY								
	drology Indicator	s:							
•	cators (minimum o		uired; check	all that app	oly)			Seco	ondary Indicators (2 or more required)
⊠ Surface	e Water (A1)			☐ Water-St	ained Leav	es (B9) (	except ML		Water Stained Leaves (B9) (MLRA 1, 2,
	, ,			4A, and 4B)		. , ,			A, and 4B))
	/ater Table (A2)			Salt Cru	` ,				Drainage Patterns (B10)
	tion (A3)			Aquatic					Dry-Season Water Table (C2)
☐ Water I	` '			Hydroge		` '		L	Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)				l Rhizosphe		_	oots (C3) L	Geomorphic Position (D2)
	eposits (B3)				e of Reduc			\c\	Shallow Aquitard (D3)
_	Mat or Crust (B4) eposits (B5)				ron Reduct or Stressed		,	,	FAC-Neutral Test (D5) Raised Ant Mounds (D6( <b>LRR A</b> )
	e Soil Cracks (B6)				xplain in R	•	JI)(LIKIK A	,	Frost-Heave Hummocks (D7)
	o com craono (Bo)		(DT)	_ 00. (2	лрішіі і і і	omano,		_	In root froate from moone (51)
	ion Visible on Aeri	al Imagen							
☐ Inundat	ion Visible on Aeri	-							
☐ Inundat ☐ Sparsel	y Vegetated Conc	-							
☐ Inundat ☐ Sparsel Field Obser	y Vegetated Conc	ave Surfa	ce (B8)	Denth (inche	ne). 6				
☐ Inundat ☐ Sparsel  Field Obser  Surface Wat	y Vegetated Concervations: er Present?	ave Surfa	ce (B8)	Depth (inche					
☐ Inundat ☐ Sparsel  Field Obser Surface Wat Water Table	y Vegetated Conc vations: er Present? Present?	eave Surfa Yes ⊠ Yes ⊠	Ce (B8)  No	Depth (inche	es): <u>0</u>		Wet	and Hydrolo	gy Present? Ves ⊠ No □
☐ Inundat ☐ Sparsel  Field Obser  Surface Wat	y Vegetated Concervations: er Present? Present? resent?	ave Surfa	Ce (B8)  No		es): <u>0</u>		Wetl	and Hydrolo	gy Present? Yes ⊠ No □
☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	y Vegetated Concervations: er Present? Present? resent?	Yes  Yes  Yes  Yes  Yes  Yes	No	Depth (inche	es): <u>0</u> es): <u>0</u>	evious ins			gy Present? Yes ⊠ No □
☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	y Vegetated Concervations:  ter Present?  Present?  tresent?  pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes	No	Depth (inche	es): <u>0</u> es): <u>0</u>	evious ins			gy Present? Yes ⊠ No □
☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	y Vegetated Conc vations: er Present? Present? resent? pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes	No	Depth (inche	es): <u>0</u> es): <u>0</u>	evious ins			gy Present? Yes ⊠ No □
☐ Inundat ☐ Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	y Vegetated Conc vations: er Present? Present? resent? pillary fringe)	Yes  Yes  Yes  Yes  Yes  Yes	No	Depth (inche	es): <u>0</u> es): <u>0</u>	evious ins			gy Present? Yes ⊠ No □

Project/Site: WeyerhaeuserCity/County: Federal Way/King Sampling Date:4/16/16								
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Po	oint: <u>FB-UP</u>	L1
Investigator(s): Richard Tveten			;	Section, To	wnship, Range: Section 16	i, T21N, R4E	Ξ	
Landform (hillslope, terrace, etc.): Till Plain		Loca	al reliet	f (concave,	convex, none): concave		Slope (%):	15
Subregion (LRR): LRR A	_ Lat: <u>47.3</u>	10897	7		Long: -122.290114		Datum: NAD	)83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	pes			NWI classificati	ion: None		
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Y	es 🛚	No ☐ (If	no, explain in Remarks.)			
Are Vegetation No, Soil No, or Hydrology No significantly d	sturbed?	,	Are "N	ormal Circu	mstances" present? Yes	⊠ No □		
Are Vegetation No, Soil No, or Hydrology No naturally probl	ematic?	(1	If need	led, explain	any answers in Remarks.)	)		
SUMMARY OF FINDINGS – Attach site map	showina	sam	nila	a point la	ocations, transects.	importan	t feature	s. etc.
	<u> </u>			, [				
Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒				e Sampled				
Wetland Hydrology Present? Yes ☐ No ☒			withi	n a Wetlan	d? Yes ☐ No			
Remarks:		<u> </u>						
VEGETATION – Use scientific names of plan								
Tree Stratum (Plot size: 30ft)	Absolute % Cover			Indicator Status	Dominance Test works			
1. Tsuga heterophylla				FACU	Number of Dominant Spe That Are OBL, FACW, or			(A)
2. Alnus rubra								` ,
3.					Total Number of Dominal Species Across All Strata			(B)
4					Percent of Dominant Spe	ncies		
Sapling/Shrub Stratum (Plot size: 15ft)	100	= To	otal Co	over	That Are OBL, FACW, or			(A/B)
1. Rubus spectabilis	60	Υ		FAC	Prevalence Index works	sheet:		
2.					Total % Cover of:		ultiply by:	
3.					OBL species			
4					FACW species	x 2 = _		_
5					FAC species			
Harb Stratum (Plat size: 5ft)	60	= To	otal Co	over	FACU species			
Herb Stratum (Plot size: 5ft)  1. Polystichum munitum	30	Υ		FACU	UPL species			
Pteridium aquilinum					Column Totals:	(A) _		_ (B)
3.					Prevalence Index =	= B/A =		
4.					Hydrophytic Vegetation	Indicators:		
5					☐ Dominance Test is >			
6.					☐ Prevalence Index is ≤			
7					☐ Morphological Adapta data in Remarks (			
8			-1-1-0-		☐ Problematic Hydroph	•	•	
Woody Vine Stratum (Plot size: 15ft)	40	= 10	otal Co	over				
1. None					<sup>1</sup> Indicators of hydric soil a			nust
2.					be present, unless disturb	sea or proble	ematic.	
	0	= To	otal Co	over	Hydrophytic Vegetation			
% Bare Ground in Herb Stratum 60 % Cov	er of Biotic C	Crust			Present? Yes	□ No ⊠		
Remarks:								

Depth	cription: (Descri Matrix		ieptn ne		ument tne lox Feature		or confirm	n the absence	of indicators.)	
(inches)	Color (moist)	<u> %</u>	Colo	r (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-7	10YR 2/2	100							Duff	
7-16	10YR 3/4	100						Gravel sand	· ·	
			_							
									-	
	-									
									-	
<sup>1</sup> Type: C=C	oncentration, D=D	Depletion, F	RM=Red	uced Matrix, C	CS=Covere	d or Coate	ed Sand G	rains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=	Matrix.
Hydric Soil	Indicators: (App	licable to	all LRR	s, unless oth	erwise not	ed.)			ors for Problematic Hydric	
☐ Histosol	• •			Sandy Redox	(S5)			☐ 2 cm	m Muck (A10)	
-	pipedon (A2)			Stripped Matrix					Parent Material (TF2)	
☐ Black Hi	` '			oamy Mucky	•		MLRA 1))		y Shallow Dark Surface (TF1	12)
_ , .	n Sulfide (A4) d Below Dark Surf	ace (A11)		oamy Gleyed Depleted Matri				☐ Otne	er (Explain in Remarks	
	ark Surface (A12)	acc (/ (/ / /		Redox Dark S	` '					
	lucky Mineral (S1)	)		Depleted Dark	Surface (F	7)		3Indicate	ors of hydrophytic vegetatior	n and
☐ Sandy G	leyed Matrix (S4)		□ F	Redox Depres	sions (F8)				and hydrology must be prese	ent,
								unle	ss disturbed or problematic.	
Restrictive	Layer (if present	):								
Type:			_							
	ches):		_					Hydric Soi	I Present? Yes ☐ No [	<b>⊠</b>
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicato	rs:								
Primary Indi	cators (minimum o	of one requ	ired; che	eck all that app	oly)			Seco	ndary Indicators (2 or more	required)
☐ Surface	e Water (A1)			☐ Water-S 4A, and 4B		/es (B9) (	except ML		] Water Stained Leaves (B9 <b>A, and 4B)</b> )	9) (MLRA 1, 2,
_ •	ater Table (A2)			☐ Salt Cru	ıst (B11)				. ,	
☐ Satura	tion (A3)			Aquatic		. ,			Dry-Season Water Table (	
	Marks (B1)			☐ Hydroge		, ,			Saturation Visible on Aeria	• • • • •
	ent Deposits (B2)			Oxidize				oots (C3) L	Geomorphic Position (D2)	
	eposits (B3)			Present				\c\	Shallow Aquitard (D3)	
_	Mat or Crust (B4) eposits (B5)			☐ Recent	or Stresse		`	,	] FAC-Neutral Test (D5) ] Raised Ant Mounds (D6( <b>L</b>	DD A\
	e Soil Cracks (B6)				Explain in R		DI)(LIKIK A		Frost-Heave Hummocks (D	•
	ion Visible on Aer		(D7)			ciliaiks)			ji rost ricave ridillillocks (D	1)
	y Vegetated Cond									
Field Obser	, ,	ave Suriac	<i>.</i> е (D0)							
Surface Wat		Yes □	No 🛛	Depth (inche	<i>56)</i> .					
Water Table			No ⊠	Depth (inche						
Saturation P			No ⊠	Depth (inche			Wet	and Hydrolog	gy Present? Yes ☐ No	$\boxtimes$
(includes ca	pillary fringe)								gy i resent: Tes 🗀 No	
Describe Re	corded Data (stre	am gauge,	monitor	ing well, aeria	l photos, pr	evious in	spections),	if available:		
Remarks:										

Project/Site: Weyerhaeuser	t/Site: WeyerhaeuserCity/County: Federal Way/King Sampling Date:4/16/16								
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: FB	-WET1		
Investigator(s): Richard Tveten			S	ection, Tov	wnship, Range: Section 16	3, T21N, R4E			
Landform (hillslope, terrace, etc.): Till plain		Loca	al relief (	(concave,	convex, none): Concave	Slope (	(%): <u>0</u>		
Subregion (LRR): <u>LRR A</u>	Lat: 47.3	10897	7		Long: -122.290114	Datum: <u>N</u>	NAD83		
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slop	pes			NWI classificati	ion: None			
Are climatic / hydrologic conditions on the site typical for this									
Are Vegetation No, Soil No, or Hydrology No significantly di	•				mstances" present? Yes	⊠ No □			
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map							ıres, etc.		
					,				
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐				Sampled .		_			
Wetland Hydrology Present? Yes ⊠ No □			within	a Wetland	d? Yes⊠ No	· 🗆			
Remarks:									
<b>VEGETATION – Use scientific names of plant</b>	s.								
Tree Stratum (Plat size: 20th)	Absolute			ndicator	Dominance Test works	heet:			
Tree Stratum (Plot size: 30ft)  1. Fraxinus latifolia	% Cover				Number of Dominant Spe That Are OBL, FACW, or	ecies · FAC: 3	(Δ)		
2							_ (/\)		
3.					Total Number of Dominal Species Across All Strata		(B)		
4.							_ (-)		
	20				Percent of Dominant Spe That Are OBL, FACW, or		(A/B)		
Sapling/Shrub Stratum (Plot size: 15ft)	_	.,	_		Prevalence Index works				
1. Rubus spectabilis					Total % Cover of:		<i>i</i> •		
3.					OBL species				
4.					FACW species				
5.					FAC species				
	5				FACU species	x 4 =			
Herb Stratum (Plot size: 5ft)			_		UPL species				
1. Polystichum munitum	10			ACU	Column Totals:	(A)	(B)		
Athyrium filix-femina     3.				AC_	Prevalence Index =	= B/A =			
4.				f	Hydrophytic Vegetation				
5.									
6.					☐ Prevalence Index is ≤	≤3.0¹			
7.					☐ Morphological Adapta				
8.					□ Problematic Hydroph	or on a separate she	,		
MandaVine Otesture (Blateine 45%)	<u>15</u>	= To	otal Cov	er er	☐ Floblematic Hydroph	ylic vegetation (EX	piairi)		
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil a	and wetland hydrolo	av must		
1. None				_	be present, unless disturb	bed or problematic.	3)		
	0	= To	otal Cov	er	Hydrophytic				
0/ Para Cround in Hosh Stratum 05					Vegetation Present? Yes	⊠ No □			
% Bare Ground in Herb Stratum <u>85</u> % Cove	er of Biotic (	Just _			riesent: Tes				
Tomano.									

Depth	ription: (Descrit Matrix		eptn ne				or confirm	n the absence	e of indicators.)
(inches)	Color (moist)	%	Colo	r (moist)	dox Feature %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 2/1		_						Duff/litter
4-13	10YR 2/1	100						Gravel muck	3
13-16	10YR 2/1	100						Muck	
10 10	1011(2)	100						WOOK	
	-								· ———
						_			
	oncentration, D=D						ed Sand G		ocation: PL=Pore Lining, M=Matrix.
_	Indicators: (App	licable to				ted.)			ors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol				Sandy Redox					m Muck (A10)
☐ Black Hi	oipedon (A2)			Stripped Mati Loamy Mucky		1 (excent	MI RA 1))		Parent Material (TF2) y Shallow Dark Surface (TF12)
l <del></del>	n Sulfide (A4)			oamy Gleyed	•				er (Explain in Remarks
_ , .	l Below Dark Surfa	ace (A11)		epleted Mati	` '				
	rk Surface (A12)			Redox Dark S	` '				
	lucky Mineral (S1)		_	Depleted Dar	•	7)			tors of hydrophytic vegetation and
□ Sandy G	leyed Matrix (S4)		∐ F	Redox Depre	ssions (F8)				and hydrology must be present, uss disturbed or problematic.
Restrictive	Layer (if present)	•							os distarbed of problematic.
Type:									
, , , <del>_</del>	ches):							Hvdric Soi	il Present? Yes ⊠ No □
Remarks:	,								
HYDROLO	GV								
-	drology Indicator cators (minimum o		irod: che	ack all that a	anlu)			Soco	ondary Indicators (2 or more required)
	e Water (A1)	i one requ	iirea, crie		Stained Leav	voc (B0) (	ovcont MI		Water Stained Leaves (B9) (MLRA 1, 2
□ Sullaci	e water (AT)			4A, and 4		ves (ba) (	except ML		A, and 4B))
	ater Table (A2)			☐ Salt Cı	rust (B11)				Drainage Patterns (B10)
	ion (A3)			☐ Aquati	c Invertebra	tes (B13)			Dry-Season Water Table (C2)
	Marks (B1)				gen Sulfide (	, ,			Saturation Visible on Aerial Imagery (CS
	ent Deposits (B2)				ed Rhizosph		-	oots (C3)	Geomorphic Position (D2)
	eposits (B3)				nce of Reduc	,	,		Shallow Aquitard (D3)
_	lat or Crust (B4)				t Iron Reduc		`	,	
	eposits (B5)				d or Stresse		D1)( <b>LRR A</b>		Raised Ant Mounds (D6( <b>LRR A</b> ) Frost-Heave Hummocks (D7)
	e Soil Cracks (B6)	-1 1	. (DZ)	☐ Other	(Explain in F	Kemarks)		L	Jefost-neave numinocks (D7)
	ion Visible on Aeri y Vegetated Conc								
Field Obser	, ,	ave Sulla	ъе (Бо)						
Surface Wat		Yes ⊠	No 🗌	Depth (inch	nec): 6				
Water Table		Yes ⊠	No 🗆	Depth (incl					
Saturation P		Yes ⊠	No 🗆	Depth (incl			Wet	and Hydrolog	gy Present? Yes ⊠ No □
(includes ca		163 🖂	140 🗀	Deptil (illici	163). <u>0</u>		Well	and mydrolog	gy i resent: Tes 🖂 No 🖂
Describe Re	corded Data (strea	am gauge,	monitor	ing well, aeri	al photos, p	revious in	spections),	if available:	
Remarks:									

Project/Site: Weyerhaeuser	(	unty: <u>Federal W</u>	/ay/King	Sampling Date:4/9/16		
Applicant/Owner: Federal Way Campus, LLC				State: WA	Sampling Point: FD-UPL1	
Investigator(s): Richard Tveten			Section, To	wnship, Range: Section 1	6, T21N, R4E	
Landform (hillslope, terrace, etc.): Road prism in Glacial till p	olain	Local	relief (concave,	convex, none): west slop	e Slope (%): <u>20</u>	
Subregion (LRR): LRR A						
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8						
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation No, Soil Yes, or Hydrology Yes significantly	-			cumstances" present? Y		
Are Vegetation No, Soil No, or Hydrology No naturally proble				any answers in Remarks		
SUMMARY OF FINDINGS – Attach site map s		,	•	•	,	
	2110 W.II.g		mig pomit it		important routuroo, otor	
Hydrophytic Vegetation Present? Yes ☐ No ☐ Hydric Soil Present? Yes ☐ No ☐ N		I:	s the Sampled	Area		
Wetland Hydrology Present? Yes ☐ No ☒		V	within a Wetlar	nd? Yes □ N	lo 🛮	
Remarks: At some point decades ago a utility line was buri	ed and a ro	ad way	was built on to	p of it.		
		•		•		
<b>VEGETATION – Use scientific names of plant</b>	s.					
			nant Indicator	Dominance Test works	sheet:	
Tree Stratum (Plot size: 30ft)			es? Status	Number of Dominant Sp		
1. Acer macrophyllum				That Are OBL, FACW, o	or FAC: <u>2</u> (A)	
2. Alnus rubra				Total Number of Domina		
3. 4.				Species Across All Strat	ta: <u>5</u> (B)	
4.	100			Percent of Dominant Sp		
Sapling/Shrub Stratum (Plot size: 15ft)	100	- 100	ai oovoi	That Are OBL, FACW, C	or FAC: 40 (A/B)	
Rubus spectabilis	<u>15</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index work	sheet:	
2.					Multiply by:	
3.			<del>_</del>		x 1 =	
4.					x 2 =	
5				· ·	x 3 = <u>165</u> x 4 = <u>480</u>	
Herb Stratum (Plot size: 5ft)	<u>15</u>	= 100	ai Cover		x 4 = 460 x 5 =	
Polystichum munitum	10	N	FACU		(A) <u>645</u> (B)	
2. Dicentra formosa	30	Υ	<u>FACU</u>	<u></u>	(-)	
3. Rubus ursinus	20	<u>Y</u>	FACU	Prevalence Index		
4.				Hydrophytic Vegetatio		
5				Dominance Test is		
6.			<del>_</del>	☐ Prevalence Index is		
7.					stations <sup>1</sup> (Provide supporting sor on a separate sheet)	
8					hytic Vegetation <sup>1</sup> (Explain)	
Woody Vine Stratum (Plot size: 15ft)	60	= I ota	al Cover			
1. None					and wetland hydrology must	
2.				be present, unless distu	rbed or problematic.	
	0	= Tota	al Cover	Hydrophytic		
% Bare Ground in Herb Stratum 40 Litter % Cove	er of Biotic C	Crust 0		Vegetation Present? Yes	s □ No ⊠	
Remarks:	, or blotte (	), ust <u>U</u>		100		

Depth	Matrix		epui ne		dox Feature		or commi	ii tile absell	nce of indicators.)	
(inches)	Color (moist)	%	Colo	r (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	_
<u>0-16</u>	10YR 3/3	100						Gravel loa	am	_
										_
								-		-
					_				<del></del>	_
										_
										_
										_
1Type: C=C	oncentration, D=D	enletion F	- PM-Red	uced Matrix (	S-Covered	d or Coate	ad Sand G	raine 2	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	_
	Indicators: (App						ou Sanu O		cators for Problematic Hydric Soils <sup>3</sup> :	
☐ Histosol				Sandy Redox		,			cm Muck (A10)	
	pipedon (A2)			Stripped Matri					ed Parent Material (TF2)	
☐ Black Hi	stic (A3)		□ l	oamy Mucky	Mineral (F1	(except	MLRA 1))	□ V	/ery Shallow Dark Surface (TF12)	
	n Sulfide (A4)			oamy Gleyed	, ,			□ Ot	ther (Explain in Remarks	
	Below Dark Surfa	ce (A11)		epleted Matri	` '					
	rk Surface (A12)			Redox Dark S	. ,	<b>7</b> \		31		
	lucky Mineral (S1) leyed Matrix (S4)			Depleted Dark Redox Depres	•	7)			cators of hydrophytic vegetation and etland hydrology must be present,	
Sandy C	leyed Matrix (54)		<u></u> '	redox Depies	30113 (1 0)				nless disturbed or problematic.	
Restrictive	Layer (if present)	<u> </u>								
	ches):							Hydric S	Soil Present? Yes □ No ⊠	
	Il for buried utility of		_					,		
rtemants. 11	ir for buried utility c	orridor.								
HYDROLO										
•	drology Indicator							_		
	cators (minimum o	f one requ	ired; che	-					econdary Indicators (2 or more required)	
☐ Surface	e Water (A1)			☐ Water-S 4A, and 4B	5)	es (B9) (	except ML		Water Stained Leaves (B9) (MLRA 1 4A, and 4B))	, 2,
_ •	ater Table (A2)			☐ Salt Cru	, ,				☐ Drainage Patterns (B10)	
☐ Satura	ion (A3)			Aquatic		. ,			Dry-Season Water Table (C2)	
☐ Water	` ,			☐ Hydrog		. ,			Saturation Visible on Aerial Imagery	(C9)
	ent Deposits (B2)			Oxidize				oots (C3)	Geomorphic Position (D2)	
	eposits (B3)			Present					Shallow Aquitard (D3)	
_	lat or Crust (B4)			Recent			,	,	FAC-Neutral Test (D5)	
	eposits (B5)				or Stresse		D1)( <b>LRR A</b>	4)	Raised Ant Mounds (D6(LRR A)	
	e Soil Cracks (B6)		(5.5)	☐ Other (	Explain in R	emarks)			☐Frost-Heave Hummocks (D7)	
	ion Visible on Aeri									
	y Vegetated Conc	ave Surfac	e (B8)							
Field Obser										
Surface Wat			No 🖂	Depth (inch						
Water Table			No 🖂	Depth (inch						
Saturation P		Yes 🗌	No 🛚	Depth (inch	es):		Wet	land Hydrol	logy Present? Yes ☐ No ⊠	
(includes ca Describe Re	olliary fringe) corded Data (strea	ım gauge.	monitor	ing well. aeria	Il photos, pr	evious ins	spections).	if available:	<u> </u>	
		3331		J :,	,, p.		, , ,			
Remarks:										

Project/Site: Weyerhaeuser		City/Co	ounty: <u>Federal \</u>	Nay/King	ng Sampling Date:4/9/16		
Applicant/Owner: Federal Way Campus, LLC				State: WA	Sampling Point: FI	D-WET1	
Investigator(s): Richard Tveten			Section, T	ownship, Range: Section 1	6, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Local	relief (concave	, convex, none): concave	Slope	(%): <u>3</u>	
Subregion (LRR): <u>LRR A</u>	Lat: 47.3	10030		Long: -122.292461	Datum:	NAD83	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8							
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation No, Soil No, or Hydrology Yes significantly of	•			cumstances" present? Ye			
Are Vegetation No, Soil Yes, or Hydrology No naturally prob				in any answers in Remarks			
SUMMARY OF FINDINGS – Attach site map				-		ures, etc.	
			<u> </u>	, ,	•		
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐			is the Sample		_		
Wetland Hydrology Present? Yes ⊠ No □		١	within a Wetla	nd? Yes ⊠ N	o 🗌		
Remarks: Drainage blocked by utility corridor fill. Soil origi	nally not hy	dric but	t changing due	to blocked drained and pro	olonged innundation	n.	
<b>VEGETATION – Use scientific names of plant</b>	ts.						
Trace Christians (Diet circu 2004)	Absolute		nant Indicator	Dominance Test works	sheet:		
Tree Stratum (Plot size: <u>.30ft</u> )  1. Thuja plicata			ies? Status FAC	Number of Dominant Sp That Are OBL, FACW, o		(Δ)	
2. Alnus rubra	·					(A)	
3.				Total Number of Domina Species Across All Strat		(B)	
4.						(5)	
	40			Percent of Dominant Sports That Are OBL, FACW, o		(A/B)	
Sapling/Shrub Stratum (Plot size: 15ft)							
1. Rubus spectabilis				Prevalence Index work  Total % Cover of:			
2				OBL species			
3. 4.				FACW species			
5.				FAC species			
	45	= Tot	al Cover	FACU species			
Herb Stratum (Plot size: 5ft)				UPL species	x 5 =		
1. Athyrium filix-femina	10	<u>Y</u>	<u>FAC</u>	Column Totals:	(A)	(B)	
2.			<u> </u>	Prevalence Index	= B/A =		
3. 4.			<del></del>	Hydrophytic Vegetation			
5.			<del></del>				
6.			<del></del>	☐ Prevalence Index is	≤3.0¹		
7.				☐ Morphological Adapt			
8.					or on a separate sh	,	
	10	= Tot	al Cover	☐ Problematic Hydroph	nytic Vegetation' (Ex	xpiain)	
Woody Vine Stratum (Plot size: 15ft)				<sup>1</sup> Indicators of hydric soil	and wetland hydrole	nav must	
1. None			<del></del>	be present, unless distur			
2.	0	= Tot	al Cover	Hydrophytic			
				Vegetation	No 🗆		
· · · · · · · · · · · · · · · · · · ·	er of Biotic C	rust <u>0</u>		Present? Yes	s⊠ No□		
Remarks: Mostly open water							

Profile Des	Motrix	,		Pod	ov Eggturg	^			
Depth (inches)	Matrix Color (moist)	%	Colo	r (moist)	ox Feature %	<u>Type<sup>1</sup></u>	Loc <sup>2</sup>	Texture	Remarks
0-1									Rotting leaves
1-7	10YR 3/2	100						Silt loam	
7-16	10YR 4/3	90	10R	1/0	10			Silt loam	Prominent feature
7-10	101 K 4/3	90	<u> 10K</u>	4/0	10			SIIL IUAITI	<u>FIOITIMENT TEATURE</u>
		<u> </u>							_
	-								
									_
									_
¹Type: C=C	oncentration, D=D	epletion,	RM=Red	uced Matrix, C	S=Covere	d or Coate	ed Sand G	rains. <sup>2</sup> l	Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRR	s, unless oth	erwise not	ed.)			ators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	, ,			Sandy Redox (					cm Muck (A10)
-	oipedon (A2)			Stripped Matrix					d Parent Material (TF2)
☐ Black Hi	` '			_oamy Mucky			MLRA 1))		ery Shallow Dark Surface (TF12)
_ , ,	en Sulfide (A4) d Below Dark Surfa	aca (Δ11)		oamy Gleyed Depleted Matrix	. ,			□ Ot	her (Explain in Remarks
	ark Surface (A12)	acc (A11)		Redox Dark Su	` ,				
	Mucky Mineral (S1)			Depleted Dark	` ,	7)		<sup>3</sup> Indic	ators of hydrophytic vegetation and
☐ Sandy G	Bleyed Matrix (S4)		☐ F	Redox Depres	sions (F8)				tland hydrology must be present,
								un	less disturbed or problematic.
	Layer (if present)								
Depth (in								Hydric S	oil Present? Yes ⊠ No □
Remarks: St	trong hydrogen su	fide odor.							
HYDROLO	)GY								
	OGY drology Indicato	rs:							
Wetland Hy			uired; che	eck all that app	oly)			<u>Se</u>	condary Indicators (2 or more required)
Wetland Hy Primary Indi	drology Indicato		uired; che	☐ Water-St	ained Leav	ves (B9) («	except ML	.RA 1, 2,	☐ Water Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi	drology Indicator cators (minimum c e Water (A1)		uired; che	☐ Water-St 4A, and 4B	ained Leav	res (B9) ( <b>•</b>	except ML	.RA 1, 2,	
Wetland Hy Primary Indi ☐ Surface ☐ High W	cators (minimum c e Water (A1)		uired; che	☐ Water-St	tained Leav ) st (B11)	, , ,	except ML	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))  Drainage Patterns (B10)
Wetland Hy Primary Indi  ☐ Surface  ☐ High W ☐ Satura	cators (minimum c e Water (A1)		uired; che	☐ Water-Si 4A, and 4B ☐ Salt Cru	rained Leav ) st (B11) Invertebrat	es (B13)	except ML	.RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
Wetland Hy Primary Indi  ☐ Surface  ☐ High W ☐ Satura ☐ Water	cators (minimum c e Water (A1) Vater Table (A2) tion (A3)		uired; che	☐ Water-Si 4A, and 4B ☐ Salt Cru ☐ Aquatic ☐ Hydroge	rained Leav ) st (B11) Invertebrat	es (B13) Odor (C1)	·	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))  Drainage Patterns (B10)  Dry-Season Water Table (C2)
Wetland Hy Primary Indi  ☐ Surface  ☐ High W ☐ Satura ☐ Water ☐ Sedime	rdrology Indicator cators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1)		uired; che	☐ Water-St 4A, and 4B ☐ Salt Cru ☐ Aquatic ☐ Hydroge ☐ Oxidized	tained Leav ) st (B11) Invertebrat en Sulfide (	es (B13) Odor (C1) eres alon	g Living Ro	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi  ☐ Surface  ☐ High W ☐ Satura ☐ Water ☐ Sedime	cators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		uired; che	☐ Water-St 4A, and 4B ☐ Salt Cru ☐ Aquatic ☐ Hydroge ☐ Oxidized	cained Leaver st (B11) Invertebrate en Sulfide C d Rhizosphere of Reduc	es (B13) Odor (C1) eres along eed Iron (C	g Living Ro	Oots (C3)	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)
Wetland Hy Primary Indi Surface High W Satura Water Sedime Drift De	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		uired; che	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presenc	cained Leaver st (B11) Invertebrate en Sulfide C d Rhizosphere of Reduc	es (B13) Odor (C1) eres alon red Iron (C	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  □ Surface  □ High W □ Satura □ Water □ Sedime □ Drift De □ Algal M □ Iron De	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4)	of one req	uired; che	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosph re of Reduction Reduc	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedime Drift De Algal N Iron De	rdrology Indicator cators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	of one req		Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosphere of Reduction Reduction Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Primary Indi  Surface  High W  Satura  Water  Sedime  Drift De  Algal N  Surface  Inundat  Sparsee	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri	of one req	y (B7)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosphere of Reduction Reduction Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N  Iron De  Surface	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri	of one req	y (B7)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosphere of Reduction Reduction Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  □ Surface  □ High W □ Satura □ Water □ Sedime □ Drift De □ Algal M □ Iron De □ Surface □ Inundat □ Sparsee	cators (minimum of e Water (A1)  Vater Table (A2)  tion (A3)  Marks (B1)  ent Deposits (B2)  eposits (B3)  Mat or Crust (B4)  eposits (B5)  e Soil Cracks (B6)  tion Visible on Aeri  ly Vegetated Concervations:	of one req	y (B7)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebrat en Sulfide ( d Rhizosph de of Reduc iron Reduc or Stresse explain in R	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedime Drift De Iron De Surface Inundat Sparse	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Concervations: ter Present?	al Imager	y (B7) ace (B8)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosph re of Reduction Reduction Reduction Respectively explain in Respectively	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation F	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Conditions: ter Present? Present?	al Imager ave Surfa	ry (B7) ace (B8) No ⊠	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	rained Leaven  st (B11)  Invertebrate  A Sulfide Control  Reduct  Iron Reduct	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (24) ed Soils (0 D1)( <b>LRR</b> A	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation P (includes ca	cators (minimum of cators (minim	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠	y (B7) ace (B8) No 🖂 No 🗆 No 🗆	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	st (B11) st (B11) Invertebraten Sulfide (Control Reductor Stresse Explain in Resserves:  as):  as): as): as(B11) as(B1	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	Doots (C3) C6) A)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation P (includes ca	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Conditions: ter Present? Present?	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠	y (B7) ace (B8) No 🖂 No 🗆 No 🗆	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	st (B11) st (B11) Invertebraten Sulfide (Control Reductor Stresse Explain in Resserves:  as):  as): as): as(B11) as(B1	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	Doots (C3) C6) A)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation P (includes ca	cators (minimum of cators (minim	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠	y (B7) ace (B8) No 🖂 No 🗆 No 🗆	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	st (B11) st (B11) Invertebraten Sulfide (Control Reductor Stresse Explain in Resserves:  as):  as): as): as(B11) as(B1	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	Doots (C3) C6) A)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation P (includes ca Describe Re	cators (minimum of cators (minim	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠	y (B7) ace (B8) No 🖂 No 🗆 No 🗆	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	st (B11) st (B11) Invertebraten Sulfide (Control Reductor Stresse Explain in Resserves:  as):  as): as): as(B11) as(B1	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	Doots (C3) C6) A)	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)

Project/Site: Weyerhaeuser		City/C	County: <u>F</u>	Federal W	/ay/King	Sampling Date: <u>4/8/16</u>		
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: FE	E-UPL1	
Investigator(s): Richard Tveten			Se	ection, To	wnship, Range: Section 16	3, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief (	concave,	convex, none): Concave	Slope	(%): <u>4-7</u>	
Subregion (LRR): LRR A								
Soil Map Unit Name: <u>Alderwood gravelly sandy loam, 0 to 8</u>								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation No, Soil No, or Hydrology No significantly di	-				ımstances" present? Yes	M No□		
Are Vegetation No, Soil No, or Hydrology No naturally problem					any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map							uras atc	
	silowing	Saiii	ipinig	point ic	Cations, transects,	important reat	ures, etc.	
Hydrophytic Vegetation Present? Yes ☐ No ☒			Is the S	Sampled	Area			
Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒			within	a Wetlan	d? Yes ☐ No	) <b> </b>		
Remarks:								
VEGETATION – Use scientific names of plan	ts.							
	Absolute		ninant In		Dominance Test works	heet:		
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Spe	ecies	(4)	
1. Acer macrophyllum				ACU_	That Are OBL, FACW, or	r FAC: 2	(A)	
2. Populus balsamifera					Total Number of Domina		<b>(D)</b>	
3. Alnus rubra4.					Species Across All Strata	a: <u>6</u>	(B)	
4.	75				Percent of Dominant Spe		(A/D)	
Sapling/Shrub Stratum (Plot size: 15ft)	10		olai oov	0.	That Are OBL, FACW, or	FAC: 33	(A/b)	
Oemleria cerasiformis	20	<u>Y</u>	<u>F</u>	ACU	Prevalence Index works	sheet:		
2.					Total % Cover of:	Multiply b	<u>y:</u>	
3.					OBL species			
4.					FACW species			
5					FAC species			
Herb Stratum (Plot size: 5ft)	20	= To	otal Cov	er	FACU species			
1. Polystichum munitum_	25	V	F	ACU	UPL species			
2. Rubus ursinus				ACU	Column Totals:	(A)	(B)	
3					Prevalence Index =	= B/A =		
4.					Hydrophytic Vegetation	n Indicators:		
5.					☐ Dominance Test is >	50%		
6.					☐ Prevalence Index is s	≤3.0¹		
7.					☐ Morphological Adapta			
8.						or on a separate sh	,	
	35	= To	otal Cov	er	☐ Problematic Hydroph	ytic Vegetation' (Ex	xplain)	
Woody Vine Stratum (Plot size: <u>15ft</u> )					11	and overthe and broden		
1. None					<sup>1</sup> Indicators of hydric soil a be present, unless distur	and wetland hydrolo bed or problematic.	ogy must	
2.					Hydrophytic	-		
	0	= 10	otal Cov	er	Vegetation			
	er of Biotic (	Crust_		_	Present? Yes	□ No ⊠		
Remarks:	<u> </u>							

	cription: (Describ	e to the d	epth needed				or confirn	n the absenc	e of indicato	rs.)	
Depth (inches)	Matrix Color (moist)	%	Color (mo		lox Feature %		Loc <sup>2</sup>	Texture		Remarks	
0-1									Duff		
1-16	10YR 3/3	_						Loam			
1-10	1011 3/3		_					LUaiii	_		,
			_						-		
			_								
			_								
	-										
¹Type: C=C	oncentration, D=De	epletion. R	M=Reduced	Matrix. (	S=Covere	d or Coate	ed Sand G	rains. <sup>2</sup> I	ocation: PL=	Pore Linino	M=Matrix
	Indicators: (Appl								tors for Prob		
☐ Histosol	(A1)		☐ Sandy	Redox	(S5)			□ 2 c	m Muck (A10	)	
☐ Histic Ep	oipedon (A2)		☐ Stripp	ed Matri	x (S6)			☐ Red	Parent Mate	rial (TF2)	
☐ Black Hi	` '			-	Mineral (F		MLRA 1))		ry Shallow Da		(TF12)
	n Sulfide (A4)	(Δ44)		-	Matrix (F2)			∐ Oth	er (Explain in	Remarks	
	d Below Dark Surfa ark Surface (A12)	ce (A11)	☐ Deplet		x (F3) urface (F6)						
	lucky Mineral (S1)		<del></del>		Surface (F	7)		<sup>3</sup> Indica	tors of hydror	hvtic veae	tation and
	leyed Matrix (S4)		•		sions (F8)	,			land hydrolog		
								unle	ess disturbed	or problem	atic.
Restrictive	Layer (if present):										
Type:			_								
Depth (in	ches):		_					Hydric So	il Present?	Yes 🗌	No ⊠
Remarks:								*			
HYDROLO	GY										
Wetland Hy	drology Indicators	<b>S</b> :									
Primary Indi	cators (minimum of	one requi	ired; check al	that ap	oly)			Sec	ondary Indica	tors (2 or n	nore required)
☐ Surface	e Water (A1)			Water-S <b>and 4B</b>	tained Leav )	ves (B9) (	except ML		Water Stai	ned Leave	s (B9) ( <b>MLRA 1, 2,</b>
☐ High W	ater Table (A2)			Salt Cru	ıst (B11)				Drainage F	Patterns (B	10)
☐ Saturat	tion (A3)			Aquatic	Invertebrat	tes (B13)			Dry-Seaso	n Water Ta	ible (C2)
☐ Water I	Marks (B1)			, ,	en Sulfide (	` '					Aerial Imagery (C9)
	ent Deposits (B2)				d Rhizosph		-	oots (C3)	_	ic Position	` ,
	eposits (B3)				e of Reduc			L	Shallow A		
_	Mat or Crust (B4)				Iron Reduc		•	,	FAC-Neuti		
	eposits (B5)				or Stresse Explain in R	,	DT)(LKK A		」 Raised An ]Frost-Heave		D6( <b>LRR A</b> )
	e Soil Cracks (B6)		(DZ)	Other (E	zxpiaiii iii K	terriarks)		L	_riosi-neave	Hullillock	(S (D7)
	ion Visible on Aeria										
Field Obser	y Vegetated Conca	ive Suriac	e (B8)								
Surface Wat		Yes 🗌	No ⊠ Dep	th (inch	es):						
Water Table					es):						
Saturation P					es):		Wet	and Hydrolo	av Present?	Vec 🗆	No ⊠
(includes ca		165	INO 🖂 Del	ili (iliciie	-s)		WELL	and Hydrolo	gy Fresent:	162	NO 🖂
Describe Re	corded Data (strea	m gauge,	monitoring w	ell, aeria	l photos, pi	evious ins	spections),	if available:			
Remarks:											

Project/Site: Weyerhaeuser		City/C	County	r: <u>Federal W</u>	ay/King Sampling Date:4/8/16		
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: FE	-WET1
Investigator(s): Richard Tveten				Section, To	wnship, Range: Section 16	6, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	f (concave,	convex, none): Concave	Slope	(%): <u>5</u>
Subregion (LRR): LRR A	Lat: 47.3	10379	)		Long: -122.296255	Datum:	NAD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8							
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation No, Soil No, or Hydrology No significantly di	•				mstances" present? Yes	⊠ No∏	
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.		
SUMMARY OF FINDINGS – Attach site map							ures, etc.
				<u> </u>	,		
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐				e Sampled		_	
Wetland Hydrology Present? Yes ⊠ No □			with	in a Wetlan	d? Yes ⊠ No	) <u> </u>	
Remarks:							
<b>VEGETATION – Use scientific names of plant</b>	s.						
Tree Stratum (Plot size: 30ft)	Absolute			Indicator	Dominance Test works		
1. Populus balsamifera	% Cover				Number of Dominant Spe That Are OBL, FACW, or	ecies r FAC: 4	<b>(A)</b>
2.							(//
3.					Total Number of Domina Species Across All Strata		(B)
4.							_ ( /
	45	= To	otal C	over	Percent of Dominant Spe That Are OBL, FACW, or		(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)	00	.,		E40	Prevalence Index work	shoot:	
Rubus spectabilis 2.					Total % Cover of:		v·
3.					OBL species		
4.					FACW species		
5.					FAC species		
	60				FACU species	x 4 =	
Herb Stratum (Plot size: 5ft)					UPL species		
1. Ranunculus repens	<u>45</u>			FAC	Column Totals:	(A)	(B)
2. Carex deweyana				FAC	Prevalence Index :	= B/A =	
4.					Hydrophytic Vegetation		_
5.							
6.					☐ Prevalence Index is	≤3.0¹	
7					☐ Morphological Adapt		
8.					□ Problematic Hydroph	or on a separate sh	•
MandaVine Otesture (Blateine 450)	60	= To	otal C	over	☐ Problematic Hydropi	lytic vegetation (Ex	кріаіт)
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil	and wetland hydrolo	nav must
1. None					be present, unless distur	bed or problematic.	,
	0	= To	otal C	over	Hydrophytic		
0/ Para Cround in Horb Stratum 40					Vegetation Present? Yes	⊠ No □	
% Bare Ground in Herb Stratum 40 % Cover Remarks:	er of Biotic (	rust _			riescin: 168		
Tomano.							

Depth	ription: (Descrii Matrix		ieptn ne		ox Feature		or commi	n the absence	e of indicators.)
(inches)	Color (moist)	%	Colo	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-13</u>	10YR 2/2	100						Mucky loam	
13-16	10YR 5/1	40	<u>10YI</u>	R 4/6	60			Sandy silt	Prominent feature
-									
	-							-	
	-								
						= <del></del>			
	oncentration, D=D						ed Sand G		ocation: PL=Pore Lining, M=Matrix.
-	Indicators: (App	licable to				ea.)			ors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	ipedon (A2)			Sandy Redox ( Stripped Matrix					m Muck (A10) Parent Material (TF2)
☐ Black Hi				_oamy Mucky I	` '	(except	MLRA 1))		y Shallow Dark Surface (TF12)
☐ Hydroge	n Sulfide (A4)			oamy Gleyed I			,,		er (Explain in Remarks
	Below Dark Surfa	ace (A11)		epleted Matrix	` '				
	rk Surface (A12)			Redox Dark Su	, ,	· <del></del> '		31 11 4	
	lucky Mineral (S1) leyed Matrix (S4)			Depleted Dark Redox Depress		· /)			ors of hydrophytic vegetation and and and hydrology must be present,
Sandy C	leyed Matrix (34)		·	redux Depress	sions (i o)				ss disturbed or problematic.
Restrictive	Layer (if present)	:							·
Type:									
Depth (in	ches):							Hydric Soi	I Present? Yes ⊠ No □
Remarks:	· ·								
HYDROLO	GY								
	drology Indicator	s:							
-	cators (minimum c		ired: che	eck all that app	ılv)			Seco	ondary Indicators (2 or more required)
	e Water (A1)			☐ Water-St		/es (B9) (	except ML		Water Stained Leaves (B9) (MLRA 1, 2,
_	( )			4A, and 4B)		( -) (			A, and 4B))
_ •	ater Table (A2)			☐ Salt Cru	' '				Drainage Patterns (B10)
Saturar     Saturar				☐ Aquatic					Dry-Season Water Table (C2)
∐ Water	` '			☐ Hydroge		, ,	5		Saturation Visible on Aerial Imagery (C9)
	ent Deposits (B2)				i Knizospn e of Reduc		g Living Ro	oots (C3)	Geomorphic Position (D2) Shallow Aquitard (D3)
	eposits (B3) lat or Crust (B4)			☐ Recent I		•	•	C6) [	
_	eposits (B5)						D1)( <b>LRR A</b>	,	Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)				xplain in R		D1)( <b>=</b> 1(1()		Frost-Heave Hummocks (D7)
	ion Visible on Aeri	al Imagery	(R7)			,		_	
	y Vegetated Conc								
Field Obser	, 0		- ( - /						
Surface Wat	er Present?	Yes 🗌	No 🛛	Depth (inche	s):				
Water Table	Present?	Yes 🖂	No 🗌	Depth (inche	s): 9	<u>_</u>			
Saturation P	resent?	Yes 🖂	No 🗌	Depth (inche			Wetl	and Hydrolog	gy Present? Yes ⊠ No □
(includes ca						andere !			
Describe Re	corded Data (strea	am gauge,	monitor	ıng well, aerial	pnotos, pi	evious ins	spections),	ıı avallable:	
Domoulisi									
Remarks:									

Project/Site: Weyerhaeuser		City/Co	unty: <u>Federal V</u>	Vay/King	Sampling Date: 4/9	/16
Applicant/Owner: Federal Way Campus, LLC				State: WA	Sampling Point: FF	UPL1
Investigator(s): Richard Tveten			Section, To	ownship, Range: Section 16	6, T21N, R4E	
Landform (hillslope, terrace, etc.): Road prism in Glacial till p	olain	Local	relief (concave,	convex, none): west slope	Slope	(%): <u>20</u>
Subregion (LRR): <u>LRR A</u>	Lat: 47.30	09731		Long: -122.292461	Datum:	NAD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8						
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation No, Soil Yes, or Hydrology Yes significantly	-			cumstances" present? Ye	es⊠ No∏	
Are Vegetation No, Soil No, or Hydrology No naturally proble				any answers in Remarks.		
		,	·	•	•	
SUMMARY OF FINDINGS – Attach site map s	snowing	samp	ling point i	ocations, transects,	important reat	ures, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒		ls	s the Sampled	Area		
Hydric Soil Present? Yes ☐ No ☐ Wetland Hydrology Present? Yes ☐ No ☐		v	within a Wetlar	nd? Yes ☐ No	o 🖂	
Remarks: At some point decades ago a utility line was buri	ed and a ro	ad wav	was built on to	p of it.		
Themand. At come point accase age a unity into that built	ou and a ro	aa nay	was bank on to	p 01 ii.		
VEGETATION – Use scientific names of plant	s.					
	Absolute	Domin	nant Indicator	Dominance Test works	heet:	
Tree Stratum (Plot size: 30ft)	·		es? Status	Number of Dominant Spe		
1. Acer macrophyllum				That Are OBL, FACW, or	r FAC: 2	(A)
2. Alnus rubra				Total Number of Domina		<b>(D)</b>
				Species Across All Strata	a: <u>5</u>	(B)
4.	100			Percent of Dominant Spe		(A /D)
Sapling/Shrub Stratum (Plot size: 15ft)	100	_ 100	ui 0010i	That Are OBL, FACW, or	1 FAC. 40	(A/D)
Rubus spectabilis	<u>15</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index work	sheet:	
2.				Total % Cover of:		-
3.			<u> </u>	OBL species		
4.				FACW species		
5				FACIL appaies		
Herb Stratum (Plot size: 5ft)	<u>15</u>	= 100	ai Cover	FACU species UPL species		
Polystichum munitum	10	N	FACU	Column Totals:		
2. Dicentra formosa	30	Υ	FACU		( ' '	(-/
3. Rubus ursinus	20	<u>Y</u>	FACU		= B/A =	_
4.				Hydrophytic Vegetation		
5				☐ Dominance Test is >		
6.			<del>_</del>	Prevalence Index is:		
7.				☐ Morphological Adapt data in Remarks	tations" (Provide sur or on a separate sh	
8.			-10	☐ Problematic Hydroph	nytic Vegetation¹ (Ex	xplain)
Woody Vine Stratum (Plot size: 15ft)	60	= I Ota	al Cover			
1. None				<sup>1</sup> Indicators of hydric soil	and wetland hydrold	ogy must
2.				be present, unless distur	bed or problematic.	
	0	= Tota	al Cover	Hydrophytic		
% Bare Ground in Herb Stratum 40 litter % Cove	er of Biotic C	Crust 0		Vegetation Present? Yes	i □ No ⊠	
Remarks:	, or blotte (	J. 431 <u>U</u>		100		

Profile Descri	ption: (Describe	to the de	pth needed to doo	ument the	indicator	or confirm	the absence of ir	ndicators.)
Depth _	Matrix		Re	dox Feature				
(inches) C	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0-16 1</u>	0YR 3/3	100					Gravel loam	
			_					
			-					
<del></del>			-					
<sup>1</sup> Type: C=Con	centration, D=Dep	oletion, RN	M=Reduced Matrix,	CS=Covere	d or Coate	ed Sand Gr	ains. <sup>2</sup> Location	n: PL=Pore Lining, M=Matrix.
			II LRRs, unless otl					or Problematic Hydric Soils <sup>3</sup> :
☐ Histosol (A	1)		☐ Sandy Redox	(S5)			☐ 2 cm Mud	ck (A10)
☐ Histic Epipe	edon (A2)		☐ Stripped Matr				☐ Red Pare	nt Material (TF2)
☐ Black Histic	c (A3)		Loamy Mucky	/ Mineral (F	(except	MLRA 1))	☐ Very Sha	llow Dark Surface (TF12)
☐ Hydrogen \$	Sulfide (A4)		☐ Loamy Gleyed	l Matrix (F2)			☐ Other (Ex	plain in Remarks
	selow Dark Surfac	e (A11)	☐ Depleted Matr	. ,				
_	Surface (A12)		Redox Dark S	, ,				
-	cky Mineral (S1)		☐ Depleted Dar	,	7)			hydrophytic vegetation and
☐ Sandy Gley	yed Matrix (S4)		☐ Redox Depre	ssions (F8)				ydrology must be present,
							unless dis	turbed or problematic.
Restrictive La	yer (if present):							
Type:			_					
Depth (inch	es):		_				Hydric Soil Pres	sent? Yes ☐ No ⊠
Remarks: Fill fo	or buried utility co	rridor.						
HYDROLOG								
	ology Indicators:							
Primary Indicat	tors (minimum of o	one requir	ed; check all that ap					/ Indicators (2 or more required)
☐ Surface V	Vater (A1)			Stained Leav <b>3</b> )	/es (B9) (	except ML	<b>RA 1, 2,</b>	ter Stained Leaves (B9) ( <b>MLRA 1, 2,</b> d <b>4B)</b> )
☐ High Wate	er Table (A2)		☐ Salt Cr	ust (B11)			☐ Dra	inage Patterns (B10)
☐ Saturation	n (A3)		☐ Aquation	c Invertebrat	es (B13)		☐ Dry	-Season Water Table (C2)
☐ Water Ma	arks (B1)		☐ Hydrog	jen Sulfide (	Odor (C1)		☐ Sat	uration Visible on Aerial Imagery (C9
☐ Sediment	Deposits (B2)		☐ Oxidize	ed Rhizosph	eres alon	g Living Ro	ots (C3) Geo	omorphic Position (D2)
☐ Drift Depo	osits (B3)		☐ Preser	ce of Reduc	ced Iron (C	C4)	☐ Sha	allow Aquitard (D3)
☐ Algal Mat	or Crust (B4)		☐ Recen	Iron Reduc	tion in Till	ed Soils (C	6)	C-Neutral Test (D5)
☐ Iron Depo	osits (B5)		☐ Stunte	d or Stresse	d Plants (	D1)(LRR A	.) 🔲 Rai	sed Ant Mounds (D6(LRR A)
☐ Surface S	Soil Cracks (B6)		☐ Other (	Explain in R	temarks)		□Fros	t-Heave Hummocks (D7)
☐ Inundation	n Visible on Aerial	Imagery (	B7)					
	Vegetated Concav							
Field Observa			. ,					
Surface Water		∕es □ N	lo 🛛 Depth (inch	nes):				
Water Table Pr				nes):				
						Mod	and Usednalaess Dro	ocent2 Vec 🗆 Ne 🕅
Saturation Pres (includes capill		′es □ N	lo 🛛 Depth (inch	nes):		vveti	and Hydrology Pre	esent? Yes 🗌 No 🗵
		n gauge, n	nonitoring well, aeri	al photos, pi	evious ins	spections),	if available:	
		-		•				
Remarks:								

Project/Site: Weyerhaeuser		City/C	county:	Federal W	ay/King Sampling Date:4/9/16			
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: FF-	WET1	
Investigator(s): Richard Tveten			s	Section, To	wnship, Range: Section 16	5, T21N, R4E		
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief	(concave,	convex, none): closed dep	oression Slope (	%): <u>0</u>	
Subregion (LRR): <u>LRR A</u>	_ Lat: 47.30	09731			Long: -122.292461	Datum: N	AD83	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation No, Soil No, or Hydrology Yes significantly of	•				umstances" present? Yes	s⊠ No∏		
Are Vegetation No, Soil Yes, or Hydrology No naturally prob					n any answers in Remarks			
SUMMARY OF FINDINGS – Attach site map					-		res, etc.	
				•	, ,			
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐				Sampled		_		
Wetland Hydrology Present? Yes ⊠ No □			within	n a Wetlan	d? Yes⊠ No	, 🗌		
Remarks: Drainage blocked by utility corridor fill. Soil origi	nally not hy	dric bu	ut chan	iging due t	o blocked drained and prol	longed innundation.		
<b>VEGETATION – Use scientific names of plant</b>	s.							
Tree Stratum (Plot size: .30ft)	Absolute			ndicator	Dominance Test works	heet:		
1. Alnus rubra	% Cover				Number of Dominant Spe That Are OBL, FACW, or	ecies FAC: 3	(A)	
2.	·						_ (//)	
3.					Total Number of Dominal Species Across All Strata		_ (B)	
4.							_ (-/	
	90	= To	otal Co	ver	Percent of Dominant Spe That Are OBL, FACW, or		(A/B)	
Sapling/Shrub Stratum (Plot size: 15ft)		.,	_		Prevalence Index works			
1. Rubus spectabilis					Total % Cover of:			
2. 3.					OBL species			
4.					FACW species			
5.					FAC species			
	10				FACU species	x 4 =		
Herb Stratum (Plot size: 5ft)			_		UPL species			
1. Athyrium filix-femina	10			FAC	Column Totals:	(A)	(B)	
Polystichum munitum  3.				FACU_	Prevalence Index =	= B/A =		
4.				•	Hydrophytic Vegetation		-	
5.	· · · · · · · · · · · · · · · · · · ·							
6.					☐ Prevalence Index is ≤	≤3.0¹		
7.					☐ Morphological Adapta			
8.					□ Problematic Hydroph	or on a separate she	,	
MandaVine Otesture (Blateine 45%)	20	= To	otal Co	ver	☐ Problematic Hydroph	ylic vegetation (Exp	ilaili)	
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil a	and wetland hydrolog	ıv must	
1. None		-			be present, unless disturb	bed or problematic.	,,	
	0	= To	otal Co	ver	Hydrophytic			
0/ Para Cround in Horb Strature 0	<u></u>				Vegetation Present? Yes	⊠ No □		
% Bare Ground in Herb Stratum 0 % Cover Remarks: Mostly open water	er of Biotic C	rust <u>(</u>	U		i reseint 168			
Tromains. Mostly open water								

Profile Des	Motrix	,		Pod	ov Eggturg	^			
Depth (inches)	Matrix Color (moist)	%	Colo	r (moist)	ox Feature %	<u>Type<sup>1</sup></u>	Loc <sup>2</sup>	Texture	Remarks
0-1									Rotting leaves
1-7	10YR 3/2	100						Silt loam	
7-16	10YR 4/3	90	10R	1/0	10			Silt loam	Prominent feature
7-10	101 K 4/3	90	<u> 10K</u>	4/0	10			SIIL IUAITI	<u>FIOITIMENT TEATURE</u>
		<u> </u>							_
	-								
									_
									_
¹Type: C=C	oncentration, D=D	epletion,	RM=Red	uced Matrix, C	S=Covere	d or Coate	ed Sand G	rains. <sup>2</sup> l	Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRR	s, unless oth	erwise not	ed.)			ators for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	, ,			Sandy Redox (					cm Muck (A10)
-	oipedon (A2)			Stripped Matrix					d Parent Material (TF2)
☐ Black Hi	` '			_oamy Mucky			MLRA 1))		ery Shallow Dark Surface (TF12)
_ , ,	en Sulfide (A4) d Below Dark Surfa	aca (Δ11)		oamy Gleyed Depleted Matrix	. ,			□ Ot	her (Explain in Remarks
	ark Surface (A12)	acc (A11)		Redox Dark Su	` ,				
	Mucky Mineral (S1)			Depleted Dark	` ,	7)		<sup>3</sup> Indic	ators of hydrophytic vegetation and
☐ Sandy G	Bleyed Matrix (S4)		☐ F	Redox Depres	sions (F8)				tland hydrology must be present,
								un	less disturbed or problematic.
	Layer (if present)								
Depth (in								Hydric S	oil Present? Yes ⊠ No □
Remarks: St	trong hydrogen su	fide odor.							
HYDROLO	)GY								
	OGY drology Indicato	rs:							
Wetland Hy			uired; che	eck all that app	oly)			<u>Se</u>	condary Indicators (2 or more required)
Wetland Hy Primary Indi	drology Indicato		uired; che	☐ Water-St	ained Leav	ves (B9) («	except ML	.RA 1, 2,	☐ Water Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi	drology Indicator cators (minimum c e Water (A1)		uired; che	☐ Water-St 4A, and 4B	ained Leav	res (B9) ( <b>•</b>	except ML	.RA 1, 2,	
Wetland Hy Primary Indi ☐ Surface ☐ High W	cators (minimum c e Water (A1)		uired; che	☐ Water-St	tained Leav ) st (B11)	, , ,	except ML	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))  Drainage Patterns (B10)
Wetland Hy Primary Indi  ☐ Surface  ☐ High W ☐ Satura	cators (minimum c e Water (A1)		uired; che	☐ Water-Si 4A, and 4B ☐ Salt Cru	rained Leav ) st (B11) Invertebrat	es (B13)	except ML	.RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))
Wetland Hy Primary Indi  ☐ Surface  ☐ High W ☐ Satura ☐ Water	cators (minimum c e Water (A1) Vater Table (A2) tion (A3)		uired; che	☐ Water-Si 4A, and 4B ☐ Salt Cru ☐ Aquatic ☐ Hydroge	rained Leav ) st (B11) Invertebrat	es (B13) Odor (C1)	·	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))  Drainage Patterns (B10)  Dry-Season Water Table (C2)
Wetland Hy Primary Indi  ☐ Surface  ☐ High W ☐ Satura ☐ Water ☐ Sedime	rdrology Indicator cators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1)		uired; che	☐ Water-St 4A, and 4B ☐ Salt Cru ☐ Aquatic ☐ Hydroge ☐ Oxidized	tained Leav ) st (B11) Invertebrat en Sulfide (	es (B13) Odor (C1) eres alon	g Living Ro	RA 1, 2,	Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B))  □ Drainage Patterns (B10)  □ Dry-Season Water Table (C2)  □ Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi  ☐ Surface  ☐ High W ☐ Satura ☐ Water ☐ Sedime	cators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		uired; che	☐ Water-St 4A, and 4B ☐ Salt Cru ☐ Aquatic ☐ Hydroge ☐ Oxidized	cained Leaver st (B11) Invertebrate en Sulfide C d Rhizosphere of Reduc	es (B13) Odor (C1) eres along eed Iron (C	g Living Ro	Oots (C3)	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)
Wetland Hy Primary Indi Surface High W Satura Water Sedime Drift De	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		uired; che	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presenc	cained Leaver st (B11) Invertebrate en Sulfide C d Rhizosphere of Reduc	es (B13) Odor (C1) eres alon red Iron (C	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  □ Surface  □ High W □ Satura □ Water □ Sedime □ Drift De □ Algal M □ Iron De	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4)	of one req	uired; che	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosph re of Reduction Reduc	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedime Drift De Algal N Iron De	rdrology Indicator cators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	of one req		Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosphere of Reduction Reduction Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Primary Indi  Surface  High W  Satura  Water  Sedime  Drift De  Algal N  Surface  Inundat  Sparsee	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri	of one req	y (B7)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosphere of Reduction Reduction Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N  Iron De  Surface	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3)  Marks (B1) ent Deposits (B2) eposits (B3)  Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri	of one req	y (B7)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosphere of Reduction Reduction Stresse	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants (	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  □ Surface  □ High W □ Satura □ Water □ Sedime □ Drift De □ Algal M □ Iron De □ Surface □ Inundat □ Sparsee	cators (minimum of e Water (A1)  Vater Table (A2)  tion (A3)  Marks (B1)  ent Deposits (B2)  eposits (B3)  Mat or Crust (B4)  eposits (B5)  e Soil Cracks (B6)  tion Visible on Aeri  ly Vegetated Concervations:	of one req	y (B7)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidizer Presence Recent Stunted	rained Leav ) st (B11) Invertebrat en Sulfide ( d Rhizosph de of Reduc iron Reduc or Stresse explain in R	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water Sedime Drift De Iron De Surface Inundat Sparse	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Concervations: ter Present?	al Imager	y (B7) ace (B8)	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	rained Leav ) st (B11) Invertebraten Sulfide ( d Rhizosph re of Reduction Reduction Reduction Respectively explain in Respectively	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro C4) ed Soils (C	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation F	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Conditions: ter Present? Present?	al Imager ave Surfa	ry (B7) ace (B8) No ⊠	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	rained Leaven  st (B11)  Invertebrate  A Sulfide Control  Reduct  Iron Reduct	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (24) ed Soils (0 D1)( <b>LRR</b> A	Oots (C3)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation P (includes ca	cators (minimum of cators (minim	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠	y (B7) ace (B8) No 🖂 No 🗆 No 🗆	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	st (B11) st (B11) Invertebraten Sulfide (Control Reductor Stresse Explain in Resserves:  as):  as): as): as(B11) as(B1	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	Doots (C3) C6) A)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation P (includes ca	rdrology Indicator cators (minimum of e Water (A1)  Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri ly Vegetated Conditions: ter Present? Present?	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠	y (B7) ace (B8) No 🖂 No 🗆 No 🗆	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	st (B11) st (B11) Invertebraten Sulfide (Control Reductor Stresse Explain in Resserves:  as):  as): as): as(B11) as(B1	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	Doots (C3) C6) A)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation P (includes ca	cators (minimum of cators (minim	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠	y (B7) ace (B8) No 🖂 No 🗆 No 🗆	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	st (B11) st (B11) Invertebraten Sulfide (Control Reductor Stresse Explain in Resserves:  as):  as): as): as(B11) as(B1	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	Doots (C3) C6) A)	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)
Wetland Hy Primary Indi  Surface  High W Satura  Water  Sedime  Drift De  Algal N Iron De  Surface  Inundat  Sparsee  Field Obser  Surface Wat  Water Table  Saturation P (includes ca Describe Re	cators (minimum of cators (minim	al Imager ave Surfa Yes □ Yes ⊠ Yes ⊠	y (B7) ace (B8) No 🖂 No 🗆 No 🗆	Water-St 4A, and 4B Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	st (B11) st (B11) Invertebraten Sulfide (Control Reductor Stresse Explain in Resserves:  as):  as): as): as(B11) as(B1	es (B13) Odor (C1) eres along ed Iron (C tion in Till d Plants ( emarks)	g Living Ro (4) ed Soils (0 D1)(LRR A	Doots (C3) C6) A)	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)

Project/Site: Weyerhaeuser		City/C	county:	Federal W	ay/King	Sampling Dat	Sampling Date: 4/9/16		
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Poi	int: <u>GB-UP</u>	<u>2</u> 1	
Investigator(s): Richard Tveten			s	ection, To	wnship, Range: Section 1	6, T21N, R4E			
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relief	(concave,	convex, none):		Slope (%):		
Subregion (LRR): <u>LRR A</u>	_ Lat: <u>47.30</u>	08279	)		Long: -122.298501	Da	atum: <u>NAD</u>	183	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	pes			NWI classifica	tion: None			
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	es 🛛	No ☐ (If	no, explain in Remarks.)				
Are Vegetation $\underline{\text{No}}$ , Soil $\underline{\text{No}}$ , or Hydrology $\underline{\text{No}}$ significantly di	sturbed?	A	Are "No	rmal Circui	mstances" present? Yes	s ⊠ No □			
Are Vegetation No, Soil No, or Hydrology No naturally proble	ematic?	(If	f neede	ed, explain	any answers in Remarks	.)			
SUMMARY OF FINDINGS - Attach site map	showing	sam	pling	point lo	cations, transects,	important	feature	s, etc.	
Hydrophytic Vegetation Present? Yes ☐ No ☒			la 4h.a	Camandad	A				
Hydric Soil Present? Yes ☐ No ☒				Sampled . a Wetland		n 🕅			
Wetland Hydrology Present? Yes ⊠ No □			WILIIII	i a wellan	u: res 🗆 iv	<u> </u>			
Remarks: Record rainfall in recent months.									
VEGETATION – Use scientific names of plant	·e								
VEGETATION – Ose scientific fiames of plant	Absolute	Domi	inant I	ndicator	Dominance Test works	sheet:			
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Sp				
1. Thuja plicata					That Are OBL, FACW, o			(A)	
2. Fraxinus excelsior					Total Number of Domina				
3.					Species Across All Strat	:a: <u>5</u>		(B)	
4.	90				Percent of Dominant Sp			(A (D)	
Sapling/Shrub Stratum (Plot size: 15ft)	30	_ 10	Jiai Co	vei	That Are OBL, FACW, o	or FAC: 40		(A/B)	
1. Rubus spectabilis	20	Υ	<u>F</u>	FAC	Prevalence Index work	sheet:			
2					Total % Cover of:				
3.					OBL species				
4.					FACW species				
5.	20				FAC species 50 FACU species 40				
Herb Stratum (Plot size: 5ft)	<u>20</u>	= 10	Jiai Cu	vei	UPL species				
Polystichum munitum	15	<u>Y</u>	<u>F</u>	FACU	Column Totals: 90				
2. Rubus ursinus	25	<u>Y</u>	<u>F</u>	FACU_					
3.					Prevalence Index  Hydrophytic Vegetatio				
4.	· · · · · · · · · · · · · · · · · · ·				Dominance Test is >				
5					☐ Prevalence Index is				
6. 7.					☐ Morphological Adap		de support	ing	
8.					data in Remarks	or on a separa	ate sheet)	•	
	40	= To	otal Cov	ver	☐ Problematic Hydrop	hytic Vegetatio	n¹ (Explair	n)	
Woody Vine Stratum (Plot size: 15ft)					Alasticatana af bunduis sail				
1. None					<sup>1</sup> Indicators of hydric soil be present, unless distu			nust	
2.	0		otal Cay		Hydrophytic				
	<u></u>				Vegetation				
	er of Biotic C	Crust (	0		Present? Yes	s □ No ⊠			
Remarks:									

Depth	cription: (Describ Matrix		lepth ne		i <b>ment the</b> i ox Feature		or confirn	n the absence	e of indicators.)
(inches)	Color (moist)	%	Colo	r (moist)	%		Loc <sup>2</sup>	Texture	Remarks
<u>0-10</u>	10YR 3/4	100						Sandy loam	
10-16	10YR 3/4	100						Sandy loam	With charcoal
		<del></del>	_					-	-
									·
		<del></del>	_					-	-
									·
,,	oncentration, D=D Indicators: (App						ed Sand Gi		ocation: PL=Pore Lining, M=Matrix. ors for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol				Sandy Redox (		ou.,			m Muck (A10)
	pipedon (A2)			Stripped Matrix					Parent Material (TF2)
☐ Black His			L	 ₋oamy Mucky l	Mineral (F1	(except	MLRA 1))		y Shallow Dark Surface (TF12)
☐ Hydroge	n Sulfide (A4)			oamy Gleyed	Matrix (F2)			☐ Othe	er (Explain in Remarks
	Below Dark Surfa	ace (A11)		epleted Matrix	` '				
	rk Surface (A12)			Redox Dark Su				_	
	lucky Mineral (S1)			Depleted Dark		7)			ors of hydrophytic vegetation and
☐ Sandy G	leyed Matrix (S4)		□ 1	Redox Depress	sions (F8)				and hydrology must be present, ss disturbed or problematic.
Restrictive	Layer (if present)	:						1	
	,								
	ches):							Hydric Soi	I Present? Yes □ No ⊠
Remarks:	· -							-	
HYDROLO	GY								
	drology Indicator	s:							
•	cators (minimum o		ired; che	eck all that app	oly)			Seco	andary Indicators (2 or more required)
Surface	e Water (A1)			☐ Water-St 4A, and 4B)		/es (B9) (	except ML		Water Stained Leaves (B9) (MLRA 1, 2, A, and 4B))
☐ High W	ater Table (A2)			☐ Salt Cru	st (B11)				Drainage Patterns (B10)
Saturat     Saturat	ion (A3)			☐ Aquatic	Invertebrat	es (B13)			Dry-Season Water Table (C2)
☐ Water I	Marks (B1)			☐ Hydroge	n Sulfide C	Odor (C1)			Saturation Visible on Aerial Imagery (C9)
☐ Sedime	ent Deposits (B2)			☐ Oxidized	l Rhizosph	eres alon	g Living Ro	oots (C3)	Geomorphic Position (D2)
	eposits (B3)				e of Reduc	,	•		] Shallow Aquitard (D3)
_	lat or Crust (B4)			_	ron Reduc		,	,	FAC-Neutral Test (D5)
	posits (B5)				or Stresse		D1)( <b>LRR A</b>		Raised Ant Mounds (D6(LRR A)
	e Soil Cracks (B6)			☐ Other (E	xplain in R	emarks)			Frost-Heave Hummocks (D7)
	ion Visible on Aeri		. ,						
	y Vegetated Conc	ave Surfac	ce (B8)						
Field Obser									
Surface Wat	er Present?		No 🛚	Depth (inche					
Water Table	Present?		No 🛚	Depth (inche					
Saturation P (includes ca	oillary fringe)		No 🗌	Depth (inche					gy Present? Yes ⊠ No □
Describe Re	corded Data (strea	am gauge,	monitor	ıng well, aerial	photos, pr	evious ins	spections),	ıt avaılable:	
Remarks: D	ecord rainfall in pre	avious mo	nthe						
inciliaiks. Ke	scoru raimaii iii pre	zvious IIIOI	ıu 13.						

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

Project/Site: Weyerhaeuser	(	City/C	County	/: <u>Federal W</u>	/ay/King	Sampling Date: 4/9/1	6
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: GB-	WET1
Investigator(s): Richard Tveten				Section, To	wnship, Range: Section 16	3, T21N, R4E	
Landform (hillslope, terrace, etc.): Glacial till plain		Loca	al relie	ef (concave,	convex, none): drainage c	hannel Slope (%	%): <u>1</u>
Subregion (LRR): <u>LRR A</u>	Lat: 47.30	08279	)		Long: -122.298501	Datum: N	AD83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8							
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation No, Soil No, or Hydrology Yes significantly of	-				umstances" present? Yes	s⊠ No∏	
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.	_	
SUMMARY OF FINDINGS – Attach site map s							res, etc.
					,	•	
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐				e Sampled		_	
Wetland Hydrology Present? Yes ⊠ No □			with	in a Wetlan	ıd? Yes ⊠ No	) <u> </u>	
Remarks: Soils probably disturbed in past logging probabl	y contributir	ng to t	topog	raphic - Pe	rhaps skid trail.		
<b>VEGETATION – Use scientific names of plant</b>	s.						
Trac Stratum (Plat size: 20th)	Absolute				Dominance Test works	heet:	
Tree Stratum (Plot size: 30ft)  1. None	% Cover				Number of Dominant Spe That Are OBL, FACW, or		(Δ)
2.							_ (/\)
3.					Total Number of Domina Species Across All Strata		(B)
4.							_ (-)
	0				Percent of Dominant Spe That Are OBL, FACW, or		(A/B)
Sapling/Shrub Stratum (Plot size: 15ft)		.,		= 4 0 14 /	Prevalence Index works		
1. Cornus sericea						Multiply by:	
2. 3.					OBL species		
4.					FACW species		
5.					FAC species		
	15				FACU species	x 4 =	
Herb Stratum (Plot size: 5ft)					UPL species		
1. Phalaris arundinacea	30	<u>Y</u>		FACW	Column Totals:	(A)	(B)
2					Prevalence Index :	= B/A =	
4.					Hydrophytic Vegetation		
5.							
6.					☐ Prevalence Index is a	≤3.0¹	
7.					☐ Morphological Adapta		
8.					□ Problematic Hydroph	or on a separate shee	•
MandaVias Obstance (Blateins 45%)	30	= To	otal C	over		ylic vegetation (Exp	iairi)
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soil a	and wetland hydrolog	v must
1. None					be present, unless distur		,
	0	= To	otal C	over	Hydrophytic		
0/ Para Cround in Horb Stratum 70				-	Vegetation Present? Yes	⊠ No □	
% Bare Ground in Herb Stratum 70 % Cove	er of Biotic C	rust	U		riesent! 168		
Tromains.							

Profile Descri	ption: (Describ	e to the o	lepth ne	eded to docui	ment the i	indicator	or confir	m the absence	of indicators.)		
Depth _	Matrix				x Feature						
(inches) C	Color (moist)	%	Colo	r (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Re	emarks	
<u>0-4</u> <u>1</u>	10YR 3/3	100						Loam	-		
<u>4-16 1</u>	I0YR 5/1	80	10YF	R 5/8	20			Silty sand	Prominent fea	ture	
									-		
					-						
¹Type: C=Con	centration, D=De	epletion. F	RM=Red	uced Matrix, CS	S=Covered	d or Coate	ed Sand G	Grains. <sup>2</sup> Lo	cation: PL=Por	e Linina. M	/=Matrix
	dicators: (Appl						<del>, , , , , , , , , , , , , , , , , , , </del>		ors for Problem		
☐ Histosol (A	١1)			Sandy Redox (S	S5)	·		☐ 2 cn	n Muck (A10)	-	
☐ Histic Epip	,			Stripped Matrix					Parent Material	(TF2)	
☐ Black Histi	c (A3)		□ L	_oamy Mucky N	/lineral (F1	(except	MLRA 1))	☐ Very	/ Shallow Dark S	Surface (T	F12)
☐ Hydrogen	, ,			oamy Gleyed N				☐ Othe	r (Explain in Re	marks	
	Below Dark Surfa	ce (A11)		Depleted Matrix	` '						
	Surface (A12) cky Mineral (S1)			Redox Dark Sur Depleted Dark S	, ,	7)		3Indicate	ors of hydrophyt	ic voqotati	ion and
-	yed Matrix (S4)			Redox Depress	,	7)			and hydrology m	-	
	you main (O i)			todox Boproco	10110 (1 0)				ss disturbed or p		
Restrictive La	yer (if present):								·		
Type:											
Depth (inch	ies):							Hydric Soil	Present? You	es 🛛 No	<b>o</b> 🗆
1	s probably distur	bed in pa	st loggin	ng probably con	tributing to	topogran	ohic - Per	haps skid trail.			
		·	00	,	· ·			·			
HYDROLOG											
_	ology Indicators							_			
	tors (minimum of	one requ	ired; che		• •				ndary Indicators		
☐ Surface V	, ,			☐ Water-Sta 4A, and 4B)		es (B9) (e	except MI		A, and 4B))	`	B9) ( <b>MLRA 1, 2,</b>
	ter Table (A2)			Salt Crus	` '				Drainage Patt		
	. ,			☐ Aquatic I		. ,			Dry-Season W		
☐ Water Ma					n Sulfide C						rial Imagery (C9)
	t Deposits (B2)				Rhizosph			_	•		2)
☐ Drift Depo	` '			_	of Reduc	,	,	OO)	•	` '	
_	t or Crust (B4)			<del></del>	on Reduc		`	,	FAC-Neutral T		(LDD A)
☐ Iron Depo	Soil Cracks (B6)				or Stresse kplain in R		DI)( <b>LKK</b>		Raised Ant Mo Frost-Heave Hu		
		llmagan	, (D7)	☐ Other (E)	γριαιτιτιτι	emarks)			i iost-rieave rit	iiiiiiocks (	(01)
	n Visible on Aeria		. ,								
Field Observa	Vegetated Conca	ive Suriac	<i>:</i> е (Бо)				1				
		Vaa 🗆	No 🏻	Donth (inches	٠١.						
Surface Water		Yes □	No ⊠	Depth (inches							
Water Table P		Yes ⊠	No 🗌	Depth (inches			18/-4		D	M N	
Saturation Pre-		Yes ⊠	No 🗌	Depth (inches	s): <u>U</u>		vvei	iiana Hyarolog	y Present? Y	es 🖂 N	lo 📙
	orded Data (strea	m gauge,	monitor	ing well, aerial	photos, pr	evious ins	spections)	, if available:			
Remarks:											

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

Project/Site: Weyerhaeuser		City/Co	ounty:	Federal W	ay/King	Sampling	Date: <u>4/9/16</u>	
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling	Point: <u>PG-U</u>	PL1
Investigator(s): Richard Tveten			s	Section, To	wnship, Range: Section	16, T21N, R4	4E	
Landform (hillslope, terrace, etc.): Hillslope		Local	ıl relief	(concave,	convex, none): None		_ Slope (%)	: <u>3-5</u>
Subregion (LRR): <u>LRR A</u>	_ Lat: <u>47.30</u>	05356	5		Long: -122.292863		Datum: NAD	D83
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8	percent slo	oes			NWI classifica	ation: None		
Are climatic / hydrologic conditions on the site typical for this	time of yea	ır? Ye	es 🛛	No ☐ (If	no, explain in Remarks.)	ı		
Are Vegetation $\underline{\text{No}}$ , Soil $\underline{\text{No}}$ , or Hydrology $\underline{\text{No}}$ significantly di	sturbed?	Α	Are "No	ormal Circu	mstances" present? Ye	s ⊠ No □	]	
Are Vegetation No, Soil No, or Hydrology No naturally proble	ematic?	(If	f neede	ed, explain	any answers in Remarks	s.)		
SUMMARY OF FINDINGS - Attach site map s	showing	samı	pling	point lo	ocations, transects	, importa	nt feature	s, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □			la tha	Campled	Area			
Hydric Soil Present? Yes ☐ No ☒				Sampled n a Wetlan		Jo 🖾		
Wetland Hydrology Present? Yes ☐ No ☒			***************************************	Tu Wellum	<b>u</b> . 100 🗀 1	10 🖸		
Remarks:								
VEGETATION – Use scientific names of plant	·e							
VEGETATION OSC SCIONATIO NATIOCS OF Plant	Absolute	Domi	inant I	Indicator	Dominance Test work	sheet:		
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Sp			
1. Alnus rubra	<u>70</u>	Yes	!	FAC	That Are OBL, FACW,	or FAC: 2		(A)
2.					Total Number of Domin			
3.					Species Across All Stra	ta: <u>3</u>		(B)
4.	70				Percent of Dominant Sp		7	(A /D)
Sapling/Shrub Stratum (Plot size: 15ft)	10	- 10	nai oo	VCI	That Are OBL, FACW, o	or FAC: <u>67</u>	<u>,                                     </u>	(A/B)
1. Rubus spectabilis	40	<u>Y</u>	!	FAC	Prevalence Index wor			
2.					Total % Cover of:			
3.					OBL species			
4					FACW species FAC species			
5.	40				FACU species 70			
Herb Stratum (Plot size: 5ft)			,		UPL species			
1. Polystichum munitum	70	<u>Y</u>	!	FACU_	Column Totals: 180			
2.					Prevalence Index	_ D/A _ 2 '	20	
3.		-			Hydrophytic Vegetation		,	
4		-			Dominance Test is:		<b>J.</b>	
6.					☐ Prevalence Index is	≤3.0¹		
7.					☐ Morphological Adap			
8.					data in Remarks		,	
W - 1 M - 2 - 1 - 1 - 1 - 1 - 1 - 1	70	= To	otal Co	ver	☐ Problematic Hydrop	nytic vegeta	ation⁺ (Expiai	in)
Woody Vine Stratum (Plot size: 15ft)					<sup>1</sup> Indicators of hydric soi	l and wetlan	d hydrology	must
1. None					be present, unless distu	irbed or prob	olematic.	maot
	0	= To	otal Co	ver	Hydrophytic			
9/ Para Cround in Horb Stratum 20				·	Vegetation Present? Yes	s⊠ No□	7	
% Bare Ground in Herb Stratum 30 % Cover Remarks:	er of Biotic C	rust <u>0</u>	J		rresentr 16	- NO [		

Profile Desc Depth	cription: (Describ		lepth ne		i <b>ment the</b> i ox Feature		or confirn	n the absence	e of indicators.)	
(inches)	Matrix Color (moist)	%	Color	(moist)	<u>%</u>		Loc <sup>2</sup>	Texture	Remarks	i
0-9	10YR 3/1	100		· · ·						<u> </u>
9-13	10YR 4/1	100							No redox	
	-									
			_		_				· -	
	-		_		_				<del>.</del> -	
								-		
<sup>1</sup> Type: C=C	oncentration, D=D	epletion, R	RM=Redu	uced Matrix, C	S=Covered	d or Coate	ed Sand G	rains. <sup>2</sup> Lo	ocation: PL=Pore Lining	g, M=Matrix.
Hydric Soil	Indicators: (App	licable to	all LRRs	s, unless othe	erwise not	ed.)		Indicat	ors for Problematic H	ydric Soils³:
☐ Histosol	` '			andy Redox (					m Muck (A10)	
	pipedon (A2)		_	tripped Matrix	` '				Parent Material (TF2)	
☐ Black Hi	` '			oamy Mucky			MLRA 1))	· <del></del>	y Shallow Dark Surface	e (TF12)
	n Sulfide (A4) d Below Dark Surfa	οςς (Λ11)		pamy Gleyed lepleted Matrix	, ,			☐ Otne	er (Explain in Remarks	
	ark Surface (A12)	ice (ATT)		epieted Mathix ledox Dark St	` '					
	lucky Mineral (S1)			epleted Dark		7)		<sup>3</sup> Indicat	tors of hydrophytic vege	etation and
☐ Sandy G	leyed Matrix (S4)		□R	edox Depress	sions (F8)			wetl	and hydrology must be	present,
								unle	ess disturbed or problem	natic.
Restrictive	Layer (if present)	:								
Depth (in	ches):							Hydric Soi	il Present? Yes □	No ⊠
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary Indi	cators (minimum o	f one requ	ired; che	ck all that app	oly)			Seco	ondary Indicators (2 or r	more required)
☐ Surface	e Water (A1)			☐ Water-St 4A, and 4B)		ves (B9) (	except ML		Water Stained Leave  A, and 4B))	s (B9) ( <b>MLRA 1, 2,</b>
	ater Table (A2)			☐ Salt Cru	` ,				Drainage Patterns (B	,
	tion (A3)			Aquatic					Dry-Season Water Ta	
☐ Water	` '			Hydroge		` '			Saturation Visible on	,
	ent Deposits (B2)				Rhizosph			oots (C3)	Geomorphic Position	
	eposits (B3)				e of Reduc			\o\	Shallow Aquitard (D3	,
_	Mat or Crust (B4)				ron Reduc		,	,	FAC-Neutral Test (D	
	eposits (B5) e Soil Cracks (B6)				or Stresse Explain in R	•	DI)(LKK A	,	Raised Ant Mounds ( Frost-Heave Hummoc	
		ما اسمممس	(DZ)	☐ Other (E	.λριαιιτιτιτ	emarks)		_	Ji 103t-i leave i idillilloc	K3 (D1)
	ion Visible on Aeri y Vegetated Conc									
Field Obser	<u> </u>	ave Sunac	.е (Бо)							
Surface Wat		Yes 🗌	No 🛛	Depth (inche	).					
Water Table										
Saturation P			No ⊠	Depth (inche			Wet	and Hudrala	gy Present? Yes	No 🖾
(includes ca		Yes 🗌	No ⊠	Depth (inche	:5)		well	and Hydrolog	gy Fresent: Tes 🗆	No ⊠
	corded Data (stream	am gauge,	monitori	ng well, aerial	photos, pr	evious ins	pections),	if available:		
Remarks:										

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

Project/Site: Weyerhaeuser	City/County: Federal Way/King Sampling Date:4/9/16							
Applicant/Owner: Federal Way Campus, LLC					State: WA	Sampling Point: F	PG-WET1	
Investigator(s): Richard Tveten			Sec	ction, Tov	vnship, Range: Section 16	3, T21N, R4E		
Landform (hillslope, terrace, etc.): Hillslope		Local	l relief (co	oncave,	convex, none): None	Slop	e (%): <u>1-2</u>	
Subregion (LRR): LRR A	Lat: 47.30	04224			Long: -122.293305	Datum	: NAD83	
Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation No, Soil No, or Hydrology No significantly di	•			,	mstances" present? Yes	⊠ No □		
Are Vegetation No, Soil No, or Hydrology No naturally proble					any answers in Remarks.)			
		`	•		,	,		
SUMMARY OF FINDINGS – Attach site map s	showing	samp	pling p	oint lo	cations, transects,	important fea	tures, etc.	
Hydrophytic Vegetation Present? Yes ⊠ No □			Is the Sa	ampled A	Area			
Hydric Soil Present? Yes ⊠ No □				Wetland		) <b></b>		
Wetland Hydrology Present? Yes ⊠ No □								
Remarks:								
VEGETATION – Use scientific names of plant								
VEGETATION - Ose scientific fiames of plant	Absolute	Domi	inant Ind	dicator	Dominance Test works	hoot:		
Tree Stratum (Plot size: 30ft)	% Cover				Number of Dominant Spe			
1. Alnus rubra	25	Yes	FA	(C	That Are OBL, FACW, or		(A)	
2. Populus balsamifera	5	N	FA	VC	Total Number of Domina	nt		
3.					Species Across All Strata		(B)	
4.					Percent of Dominant Spe	acies		
Conline (Chrush Ctrotum (Diet circu 4 Eft)	30	= Tot	tal Cove	r	That Are OBL, FACW, or		(A/B)	
Sapling/Shrub Stratum (Plot size: 15ft)  1. Rubus spectabilis	90	V	ΕΛ.		Prevalence Index works	sheet:		
					Total % Cover of:		by:	
3.					OBL species		-	
4.					FACW species			
5.					FAC species			
	80	= Tot	tal Cove	er	FACU species			
Herb Stratum (Plot size: 5ft)					UPL species			
1. None		-			Column Totals:	(A)	(B)	
2.					Daniela e a la dan	D/A		
3.					Prevalence Index =			
4.					Hydrophytic Vegetation			
5					□ Dominance Test is >!     □ Dominance			
6.		-			☐ Prevalence Index is ≤			
7		-			☐ Morphological Adapta data in Remarks (			
8					☐ Problematic Hydroph	ytic Vegetation <sup>1</sup> (I	Explain)	
Woody Vine Stratum (Plot size: 15ft)	0	= 101	tal Cove	er				
1. None					<sup>1</sup> Indicators of hydric soil a	and wetland hydro	ology must	
2.				_	be present, unless disturb	bed or problemation	c.	
	0	= Tot	tal Cove	er e	Hydrophytic			
N/ Para Constant in Hart Otentum 400					Vegetation	M No □		
	er of Biotic C	rust <u>0</u>	)	_	Present? Yes	⊠ No □		
Remarks:								

Depth	ription: (Descri Matrix		ieptn ne		i <b>ment the</b> i ox Feature		or contirn	i the absei	nce of indicators.)	
(inches)	Color (moist)	%	Colo	r (moist)	% <u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Rema	arks
0-6	10YR 3/1	100						Loam		
6-8	10YR 4/1	100						SiL		
	_									
	-				_					_
	oncentration, D=D						ed Sand G		<sup>2</sup> Location: PL=Pore Li	
_	Indicators: (App	licable to				ed.)			cators for Problemati	c Hydric Soils³:
☐ Histosol	• •			Sandy Redox (					2 cm Muck (A10)	<b>-</b> 20)
☐ Black Hi	oipedon (A2)			Stripped Matrix Loamy Mucky I		(except	MI RA 1))		ed Parent Material (TF /ery Shallow Dark Surl	•
_	n Sulfide (A4)			oamy Gleyed I	•		,		other (Explain in Rema	
	d Below Dark Surf	ace (A11)		epleted Matrix	, ,				` '	
	ark Surface (A12)			Redox Dark Su	, ,					
	lucky Mineral (S1)			Depleted Dark		7)			cators of hydrophytic v	
□ Sandy G	leyed Matrix (S4)		☐ F	Redox Depress	sions (F8)				retland hydrology must nless disturbed or prob	
Restrictive	Layer (if present	):						1	Theos distarbed of proc	nomatio.
Type:	_u_o. ( p. ooo)									
, , , <del>_</del>	ches):							Hydric S	Soil Present? Yes [	⊠ No □
Remarks:								, , ,		
HYDROLO	GY									
	drology Indicato	re-								
-	cators (minimum o		ired: che	eck all that app	olv)			Se	econdary Indicators (2	or more required)
	e Water (A1)	<u> </u>	mou, one	☐ Water-St		es (B9) (	except ML			aves (B9) ( <b>MLRA 1, 2</b> ,
	,,			4A, and 4B)		(20) (	<u>-</u>	, _,	4A, and 4B))	a.oo (20) ( <u>2</u>
_ •	ater Table (A2)			☐ Salt Crus	, ,				☐ Drainage Patterns	s (B10)
Saturar     Saturar	tion (A3)			Aquatic		` '			☐ Dry-Season Water	
	Marks (B1)			☐ Hydroge		, ,				on Aerial Imagery (C9)
	ent Deposits (B2)			Oxidized				oots (C3)	Geomorphic Posi	` '
	eposits (B3)			☐ Presenc	e of Reduc	•	,	·e)	☐ Shallow Aquitard	` '
_	Mat or Crust (B4) eposits (B5)				or Stresse		`	,	☐ FAC-Neutral Test☐ Raised Ant Moun	
	e Soil Cracks (B6)	1			xplain in R		D1)(LIKIK P	•)	☐Frost-Heave Humr	
	ion Visible on Aer		(R7)	oo. (=						
	y Vegetated Cond									
Field Obser	, ,		(20)							
Surface Wat		Yes 🗌	No 🖂	Depth (inche	es):					
Water Table		Yes 🗌	No 🗵	Depth (inche						
Saturation P		Yes ⊠	No 🗆	Depth (inche			Wetl	and Hydro	logy Present? Yes	⊠ No □
(includes ca	pillary fringe)									
Describe Re	corded Data (stre	am gauge,	monitor	ıng well, aerial	photos, pr	evious ins	spections),	ıt available	C .	
D /										
Remarks:										

### **APPENDIX B**

FEATURE SUMMARY TABLE, TALASAEA CONSULTANTS, 2017

# Greenline Business Park FEATURE SUMMARY TABLE

				2014 DOE W	etland Rating		Square	Standard Buffer
#	Wetland ID	Cowardin	HGM	Category	Habitat Score	Acreage	Footage**	(feet), FWRC Ch.19
1	AE	PEM	Depressional	III	4	0.0055	239	60
2	AF	PEM	Depressional	III	4	0.0109	473	60
3	AG	PFO	Depressional	III	4	0.1469	6,397	60
4	АН	PSS	Depressional	III	4	0.0163	712	60
5	AI	PEM	Slope	IV	3	0.0699	3,044	40
6	AJ	PEM	Slope	IV	3	0.0012	51	40
7	AL	PEM	Slope	IV	3	0.0246	1,072	40
8	AM	PEM	Slope	IV	3	0.0303	1,319	40
9	AO	PEM	Slope	IV	3	0.0018	79	40
10	AR	PEM	Slope	IV	3	0.0006	26	40
11	AS	PEM	Slope	IV	3	0.0068	295	40
12	AV	PFO	Depressional	III	4	0.2831	12,332	60
13	BA-2	PSS	Depressional	III	4	0.0154	670	60
14	BR	PEM	Depressional	III	5	0.0508	2,211	105
15	BS (N)	PFO	Depressional	III	4	0.0616	2,683	60
16	BS (S)	PEM	Depressional	IV	3	0.0044	192	40
17	СВ	PFO	Depressional	III	5	0.6894	30,030	105
18	CE	PEM	Depressional	III	4	0.0051	223	60
19	CG	PFO	Depressional	IV	4	0.0794	3,458	40
20	DE	PFO	Depressional	III	3	0.4948	21,554	60
21	DF	PFO	Depressional	III	3	0.0019	81	60
22	DG	PFO	Depressional	III	3	0.0253	1,103	60
23	DH	PFO	Depressional	III	3	0.0062	271	60
24	DI	PFO	Depressional	III	3	0.0052	227	60
25	DK	PFO	Depressional	III	3	0.1454	6,332	60
26	EI	PFO	Depressional	IV	3	0.0040	175	40
27	EJ	PSS	Depressional	III	3	0.0053	231	60

# Greenline Business Park FEATURE SUMMARY TABLE

				2014 DOE W	etland Rating		Square	Standard Buffer
#	Wetland ID	Cowardin	HGM	Category	Habitat Score	Acreage	Footage**	(feet), FWRC Ch.19
28	EK	PSS	Depressional	III	3	0.0041	179	60
29	EL	PSS	Depressional	III	3	0.0085	372	60
30	EM	PSS	Depressional	III	3	0.0070	306	60
31	FA	PSS	Slope	IV	4	0.0499	2,174	40
32	FB	PSS	Depressional	III	4	0.1688	7,353	60
33	FD	PFO	Depressional	IV	3	0.0157	686	40
34	FE	PFO	Depressional	III	5	0.0074	324	105
35	FF	PSS	Depressional	IV	3	0.0225	978	40
36	GB (N)	PSS	Depressional	III	3	0.0775	3,377	60
37	IA	PEM	Slope	IV	3	0.0603	2,625	40
38	KA	PEM	Slope	IV	4	0.0238	1,038	40
39	КВ	PEM	Slope	IV	5	0.0003	15	40
40	КС	PEM	Slope	IV	6	0.0072	314	40
41	KD	PEM	Slope	IV	7	0.0407	1,771	40
42	KF	PEM	Slope	IV	8	0.0087	378	40
43	КН	PEM	Slope	IV	3	0.0010	45	40
44	KI	PEM	Slope	IV	3	0.0013	58	40
45	KJ	PEM	Slope	IV	3	0.0008	37	40
46	KK	PEM	Slope	IV	3	0.0003	12	40
47	KL	PEM	Slope	IV	3	0.0010	44	40
48	KM	PEM	Slope	IV	3	0.0003	14	40
49	KN	PEM	Slope	IV	10	0.0156	678	40
50	кт	PEM	Slope	IV	11	0.0055	239	40
51	KU	PEM	Slope	IV	12	0.0013	55	40
52	KV	PEM	Slope	IV	13	0.0017	74	40
53	KW	PEM	Slope	IV	14	0.0176	765	40
54	PK	PFO	Depressional	III	4	0.0310	1,350	60

### Greenline Business Park FEATURE SUMMARY TABLE

### WETLANDS WITHIN SHORELINE MANAGEMENT ZONE

#	Wetland ID	Cowardin	HGM	Acreage	Square Footage**	Standard Buffer (feet), FWRC Ch.15
55	ВА	PFO	Depressional	0.1980	8,626	100
56	ВВ	PFO	Depressional	0.0687	2,992	25
57	BD (N)	PFO/PSS	Depressional	2.6667	116,160	100
58	ВК	PSS	Slope	0.0028	121	0
59	BL	PSS	Slope	0.0467	2,035	0
60	BE	PFO	Slope	0.0053	231	0
61	BF	PSS	Slope	0.0564	2,455	0
62	CD	PSO/PSS	Lake Fringe	2.4710	107,636	200
63	PG (BJ)	PFO/PSS	Slope	0.4075	17,752	100

# Greenline Business Park FEATURE SUMMARY TABLE

# **LINEAR FEATURES - STREAMS/LAKES**

#	Waterbody ID	Туре	Standard Buffer (feet), FWRC Ch.15/19
1	Stream AC	F	100
2	North Lake	Lake	50

### **APPENDIX C**

### PHOTODOCUMENT, TALASAEA CONSULTANTS, 2017

The following is a compilation of photos taken between December 2015 and May of 2016 by employees of Talasaea Consultants on various site visits. Wetlands delineated on-site were part of a larger effort to document all wetlands found throughout the Federal Way Campus, LLC property in Federal Way (formerly owned by Weyerhaeuser), which explains the irregular wetland labels.

Included in this photodocument are photos of typical wetland vegetation, typical coniferous and deciduous upland, and gravel access roads throughout the site.

# **Typical Herbaceous Wetland (Photo 1)**



**Photo 1.** Typical herbaceous wetland – salmonberry, Himalayan blackberry, red alder, reed canarygrass, and creeping buttercup.

# Typical Forested Wetlands (Photos 2 - 4)



Photo 2. Typical forested wetland: black cottonwood, European ash, and salmonberry.



Photo 3. Typical wetland canopy consists of European ash.



Photo 4. Typical salmonberry wetland with European Ash planted in rows.

# Typical Open Field (Photos 5 – 7)



**Photo 5.** Panorama of open field from the east side.



Photo 6. Typical emergent wetland vegetation within the open field.



Photo 7. Typical wetland vegetation within open field.

# Stream Channel (Photos 8 – 9)



Photo 8. Stream channel looking north from the access road.



Photo 9. Stream channel looking south from the access road.

# Stormwater (Photo 10)



Photo 10. Stormwater pond located on site.

# Forested Uplands (Photo 11)



Photo 11. Typical conifer forested upland: Douglas fir, salmonberry, and sword fern.

# **Upland Understory (Photo 12)**



**Photo 12.** Typical herbaceous understory in uplands: sword fern and creeping buttercup.

# Access Roads (Photo 13)



Photo 13. Along the access road in the northwest corner of the property, facing south.

### **APPENDIX D**

WETLAND RATING FORMS, TALASAEA CONSULTANTS, 2016 & 2017

# RATING SUMMARY – Western Washington

Name of wetland (or ID #):	TAL 1572 Date of site visit: 1/15/16
Rated by Tr	TAL 1572 Date of site visit: 1/15/16 rained by Ecology? YesNo Date of training 4/15
HGM Class used for rating pepkembna	
NOTE: Form is not complete without t Source of base aerial photo/map	the figures requested (figures can be combined).
OVERALL WETLAND CATEGORY	(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
<b>Category III</b> – Total score = 16 - 19
Category IV - Total score = 9 - 15

Improving Water Quality		Hydrologic			Habita				
				Circle t	he a	propi	riate ra	tings	
Н	(M)	L	Н	(M)	L	Н		(L)	
Н	(M	L	Н	(M)	L	Н	М	(L)	
(A)	M	L	Н	(W)	L	Н	(M)	L	TOTAL
	7			0			L	1	^
	Wat	H M	H M L H M L	Water Quality  H M L H H M L H	Water Quality  Circle t  H M L H M  H M L H M	Water Quality  Circle the ap  H M L H M L H M L	Water Quality  Circle the appropriate the H M L H M L H H M L H	Water Quality  Circle the appropriate ra  H M L H M L H H M L H M	Water Quality  Circle the appropriate ratings  H M L H M L H L H M L H M L

### Score for each function based on three ratings (order of ratings is not important) 9 = H, H, H8 = H,H,M7 = H,H,L7 = H, M, M6 = H,M,L 6 = M,M,M5 = H,L,L5 = M,M,L4 = M, L, L3 = L, L, L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	1
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	X

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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2_
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  Wetland has persistent, ungrazed plants > ½ of area  Wetland has persistent, ungrazed plants > 1/10 of area  Wetland has persistent, ungrazed plants < 1/10 of area  points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ¼ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 0	2
Total for D 1 Add the points in the boxes above	7
Rating of Site Potential If score is:12-16 = H $\times$ 6-11 = M0-5 = L Record the rating on the first pour 2.0. Does the landscape have the potential to support the water quality function of the site?	age
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. ls > 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 = $1 \text{ No} = 0$	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?  Source Yes = 1 No = 0	U
Total for D 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the fi	rst 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)? $9.9.7$ Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3
Rating of Value If score is: 2-4 = H1 = M0 = 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 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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 = 0D 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3Wetland 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. The area of the basin is less than 10 times the area of the unit points = 5The area of the basin is 10 to 100 times the area of the unit points = 3The area of the basin is more than 100 times the area of the unit points = 0Entire wetland is in the Flats class points = 5 Total for D 4 Add the points in the boxes above Rating of Site Potential If score is: $12-16 = H \times 6-11 = M$ 0-5 = LRecord the rating on the first page ) 5.0. Does the landscape have the potential to support hydrologic functions of the site? Yes = 1 No = 0D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? 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 = 0Add the points in the boxes above Total for D 5 Rating of Landscape Potential If score is: \_\_\_\_ 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): Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 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 = 0There 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?

Rating of Value If score is:  $_2-4 = H \times 1 = M = 0 = L$ 

Total for D 6

Record the rating on the first page

Yes = 2 No = 0

Add the points in the boxes above

### 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. Aquatic bed 4 structures or more: points = 4 N Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 Forested (areas where trees have > 30% cover) 1 structure: points = 0 If the unit has a Forested class, check if: 7 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). Permanently flooded or inundated 4 or more types present: points = 3 X Seasonally flooded or inundated 3 types present: points = 2 \_Occasionally flooded or inundated 2 types present: points = 1 Saturated only 1 type present: points = 0 \_\_X\_Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points 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 ft<sup>2</sup>. 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 = 25 - 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 All three diagrams in this row are HIGH = 3points

	t features:		
Check the hab	itat features that are present in the wetland. The number of checks is the numb wned, woody debris within the wetland (> 4 in diameter and 6 ft long).  snags (dbh > 4 in) within the wetland	er of points.	
Undercu over a st	banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at ream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) tep banks of fine material that might be used by beaver or muskrat for denning		
slope) O where w	R signs of recent beaver activity are present (cut shrubs or trees that have not ye ood is exposed)  ac of thin-stemmed persistent plants or woody branches are present in areas the	t weathered	2
perman	ently or seasonally inundated <i>(structures for egg-laying by amphibians)</i> plants cover less than 25% of the wetland area in every stratum of plants (see H		
otal for H 1	Add the points in t	the boxes above	2
Rating of Site Poten	tial If score is:15-18 = H14 = M0-6 = L	cord the rating on	the first pag
H 2.0. Does the lar	dscape have the potential to support the habitat functions of the site?		
1 2.1. Accessible hal	itat (include only habitat that directly abuts wetland unit).		
Calculate:	% undisturbed habitat + [(% moderate and low intensity land uses)/2]_	=%	
If total access			
	ble habitat is: f 1 km Polygon	points = 3	
	f 1 km Polygon	points = 3 points = 2	2/2
> 1/3 (33.3%) (	f 1 km Polygon n Polygon	•	2/2
$> \frac{1}{3}$ (33.3%) of 20-33% of 1 k	f 1 km Polygon n Polygon n Polygon	points = 2	2/2
> 1/3 (33.3%) of 20-33% of 1 k 10-19% of 1 k < 10% of 1 km	f 1 km Polygon n Polygon n Polygon	points = 2 points = 1	2/2
> <sup>1</sup> / <sub>3</sub> (33.3%) of 20-33% of 1 k 10-19% of 1 k < 10% of 1 km	f 1km Polygon n Polygon n Polygon Polygon	points = 2 points = 1 points = 0	2/2
> 1/3 (33.3%) of 20-33% of 1 k 10-19% of 1 k < 10% of 1 km I 2.2. Undisturbed h Calculate:	f 1 km Polygon n Polygon n Polygon Polygon abitat in 1 km Polygon around the wetland.	points = 2 points = 1 points = 0	2/2
> 1/3 (33.3%) of 20-33% of 1 k 10-19% of 1 k < 10% of 1 km I 2.2. Undisturbed h Calculate: Undisturbed h	f 1 km Polygon  n Polygon  n Polygon  Polygon  abitat in 1 km Polygon around the wetland.  % undisturbed habitat + [(% moderate and low intensity land uses)/2]_	points = 2 points = 1 points = 0	2/2
> 1/3 (33.3%) of 20-33% of 1 k 10-19% of 1 km < 10% of 1 km 1 2.2. Undisturbed h Calculate: Undisturbed h	f 1 km Polygon  n Polygon  n Polygon  Polygon  abitat in 1 km Polygon around the wetland.  % undisturbed habitat + [(% moderate and low intensity land uses)/2]_ abitat > 50% of Polygon	points = 2 points = 1 points = 0  =% points = 3	2/2
> 1/3 (33.3%) of 20-33% of 1 k 10-19% of 1 km 10-19% of 1 km 12.2. Undisturbed h Calculate: Undisturbed h Undisturbed h Undisturbed h	f 1 km Polygon m Polygon m Polygon Polygon Polygon abitat in 1 km Polygon around the wetland. % undisturbed habitat + [(% moderate and low intensity land uses)/2]_ abitat > 50% of Polygon abitat 10-50% and in 1-3 patches	points = 2 points = 1 points = 0  =% points = 3 points = 2	2/2
> 1/3 (33.3%) of 20-33% of 1 k 10-19% of 1 k < 10% of 1 km I 2.2. Undisturbed h Calculate: Undisturbed h Undisturbed h Undisturbed h	f 1 km Polygon m Polygon m Polygon Polygon abitat in 1 km Polygon around the wetland. % undisturbed habitat + [(% moderate and low intensity land uses)/2]_ abitat > 50% of Polygon abitat 10-50% and in 1-3 patches abitat 10-50% and > 3 patches	points = 2 points = 1 points = 0  =% points = 3 points = 2 points = 1	2/2
> 1/3 (33.3%) of 20-33% of 1 k 10-19% of 1 k 10-19% of 1 km 1 2.2. Undisturbed h Calculate: Undisturbed h Undisturbed h Undisturbed h Undisturbed h Undisturbed h 1 2.3. Land use inter	f 1 km Polygon  n Polygon  Polygon  Polygon  abitat in 1 km Polygon around the wetland.  % undisturbed habitat + [(% moderate and low intensity land uses)/2]_ abitat > 50% of Polygon abitat 10-50% and in 1-3 patches abitat 10-50% and > 3 patches abitat < 10% of 1 km Polygon	points = 2 points = 1 points = 0  =% points = 3 points = 2 points = 1	2/2
> 1/3 (33.3%) of 20-33% of 1 k 10-19% of 1 km 10-19% of 1 km 12.2. Undisturbed h Calculate: Undisturbed h Undisturbed h Undisturbed h Undisturbed h 12.3. Land use inter > 50% of 1 km	f 1 km Polygon  n Polygon  Polygon  abitat in 1 km Polygon around the wetland.  % undisturbed habitat + [(% moderate and low intensity land uses)/2]_  abitat > 50% of Polygon  abitat 10-50% and in 1-3 patches  abitat 10-50% and > 3 patches  abitat < 10% of 1 km Polygon  sity in 1 km Polygon: If	points = 2 points = 1 points = 0  =% points = 3 points = 2 points = 1 points = 0	2/2

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 that applies to the wetland being rated.	se only the highest score
Site meets ANY of the following criteria:	points = 2
— It has 3 or more priority habitats within 100 m (see next page)	
— It provides habitat for Threatened or Endangered species (any plant or animal on	the state or federal lists)
It is mapped as a location for an individual WDFW priority species	
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of N</li> </ul>	71
<ul> <li>It has been categorized as an important habitat site in a local or regional compreh Shoreline Master Plan, or in a watershed plan</li> </ul>	ensive plan, in a
Site has 1 or 2 priority habitats (listed on next page) within 100 m	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**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID#): Wetland Ab,	
Rated by 1 Majeri off Tra	ined by Ecology? YesNo Date of training_\ff/5
HGM Class used for rating <u>DepResonal</u>	Wetland has multiple HGM classes?X_Y,N
•	e figures requested (figures can be combined).
Source of base aerial photo/map	-
OVERALL WETLAND CATEGORY TIL	(based on functions X or special characteristics )

### 1. Category of wetland based on FUNCTIONS

	_Category I — Total score = 23 - 27
	_Category II - Total score = 20 - 22
X	_Category III - Total score = 16 - 19
	Category IV - Total score = 9 - 15

FUNCTION	Improving Water Quality		Н	ydrolo	ogic		Habit	at		
					Circle	the ap	ргор	riate ro	atings	
Site Potential	H (	V)	L_	Н	M	L	Н		0	
Landscape Potential	H (	5	F_	Н	W	レ	H		9	
Value	(H)	M	L	н	(M)	L	Н	M	t	TOTAL
Score Based on Ratings		7			6			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 5 = 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	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	1
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	i ii iii iv
None of the above	×

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
ر 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	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	1
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	
Wetland has persistent, ungrazed, plants > ½ of area points = 3	3
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area points = 1	<u></u>
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ¼ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 2  points = 0	4
Total for D 1 Add the points in the boxes above	8
Rating of Site Potential If score is:12-16 = H \( \times 6-11 = M \)0-5 = L Record the roting on the first page	ge
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	f-
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?  Source  Yes = 1 No = 0	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 fire	st 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 = $2 \text{ No} = 0$	2
Total for D 3 Add the points in the boxes above	3

Rating of Value | If score is: \_\_\_\_\_\_2-4 = H \_\_\_\_\_1 = M \_\_\_\_\_0 = L

Record the rating on the first page

wedand name of number <u>7117</u>	
DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradatio	n
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet  The wetland is a "headwater" wetland  Wetland is flat but has small depressions on the surface that trap water  Marks of ponding less than 0.5 ft (6 in)	3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	6
Rating of Site Potential If score is: 12-16 = H 26-11 = M 0-5 = L Record the rating on the fi	irst page
5.0. Does the landscape have the potential to support hydrologic functions of the site?	
> 5.1. Does the wetland 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	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	1
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 fi	irst 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2  • Surface flooding problems are in a sub-basin farther down-gradient. points = 1  Flooding from groundwater is an issue in the sub-basin.	1
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  There are no problems with flooding downstream of the wetland. points = 0	
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

ating 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 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, 4 structures or more: points = 4 Aquatic bed 3 structures: points = 2 \_Emergent Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 1 structure: points = 0 X Forested (areas where trees have > 30% cover) 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) 4 or more types present: points = 3 Permanently flooded or inundated 3 types present. points = 2 ★ Seasonally flooded or inundated 2 types present: points = 1 Occasionally flooded or inundated 1 type present: points = 0 Saturated only $\overline{\lambda}$ Permanently flowing stream or river in, or adjacent to, the wetland \_\_Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 2 points Freshwater tidal wetland 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 points = 2If you counted: > 19 species points = 1 5 - 19 species points = 0 < 5 species 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. Moderate = 2 points None = 0 points Low = 1 point All three diagrams

in this row

are HIGH = 3points

H 1.5. Special habitat features:  Check the habitat features that are present in the wetland. The number of checks is the number of points.  Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).  Standing snags (dbh > 4 in) within the wetland  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)  Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)  At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)  Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	I
Total for H 1 Add the points in the boxes above	6.
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 functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).  Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = %  If total accessible habitat is:  > \frac{1}{3} (33.3%) of 1 km Polygon  20-33% of 1 km Polygon  20-19% of 1 km Polygon  20-10** points = 2  20** points = 1  20** points = 0  Provided thabitat in 1 km Polygon around the wetland.  Calculate: % undisturbed habitat	1 -2
≤ 50% of 1 km 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: 4-6 = H 1-3 = M 2 < 1 = L Record the rating on t	he 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  — It has 3 or more priority habitats within 100 m (see next page)  — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)  — It is mapped as a location for an individual WDFW priority species  — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  — 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) within 100 m points = 1	-1
Site does not meet any of the criteria above points = 0  ating of Value if score is: $2 = H$ $1 = M$ $0 = L$ Record the rating on	the first page
acting of value if Score is z = n	j se 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/confer 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 !lsewhere.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):A V	Date of site visit: 1/15/16
Rated by J. Markjoft	Trained by Ecology? $\times$ YesNo Date of training $4/15$
HGM Class used for rating pepression of	Wetland has multiple HGM classes?YX N
•	t the figures requested (figures can be combined).
OVERALL WETLAND CATEGORY	(based on functions $\frac{\chi}{}$ 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			Habit				
					Circle t	he a	propi	riate ro	itings	
Site Potential	Н	M	L	Н	M	L	Н	М	D	
Landscape Potential	Н	W	L	Н	M	L	Н	М	0	
Value	H	М	L	Н	M	L	Н	M	L	TOTAL
Score Based on Ratings		7			6			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	I II		
Wetland of High Conservation Value	I		
Bog	I		
Mature Forest	I		
Old Growth Forest	I		
Coastal Lagoon	I II		
Interdunal	I II III IV		
None of the above	X		

### **HGM Classification of Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated. If the 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)? **YES - Freshwater Tidal Fringe** NO - Saltwater Tidal Fringe (Estuarine) 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.  $\sqrt{0}$  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

The overbank flooding occurs at least once every 2 years.

stream or river.

### Wetland name or number AV

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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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.

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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
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  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is < ½ total area of wetland  Area seasonally ponded is < ½ total area of wetland  points = 0	4
Total for D 1 Add the points in the boxes above	9
Rating of Site Potential If score is:12-16 = H <u>X_6-11 = M_0-5 = L</u> Record the rating on the first page	ge
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. ls > 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?  Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 or 4 = HX_1 or 2 = M0 = L Record the rating on the fin	rst 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	2
Total for D 3 Add the points in the boxes above	3
Rating of Value If score is: X 2-4 = H1 = M0 = 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	on
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	2
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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	3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	8
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L	first page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland 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	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	1
Total for D 5 Add the points in the boxes above	2
Rating of Landscape Potential If score is:3 = H1 or 2 = M0 = L Record the rating on the part of the score is:3 = H1 or 2 = M0 = L	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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.	1
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  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	O
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: \_\_\_\_2-4 = H \_\_\_\_\_1 = M \_\_\_\_0 = L

### 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. Aquatic bed 4 structures or more: points = 4 Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 X 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). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 3 types present: points = 2 2 types present: points = 1 Occasionally flooded or inundated 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland \_Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points 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 ft<sup>2</sup>. 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 points = 0 < 5 species 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 Moderate = 2 points Low = 1 point All three diagrams in this row are HIGH = 3points

H 1.5, Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
X Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) <b>and/or</b> overhanging plants extends at least 3.3 ft (1 m)	
over a stream (or ditch) in, or contiguous with the wetland, for at least 3.3 ft (10 m)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	1
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	3
permanently or seasonally inundated (structures for egg-laying by amphibians)	2
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	6
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L Record the rating on	the Jirst page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$>$ $^{1}/_{3}$ (33.3%) of 1 km Polygon points = 3	
20-33% of 1 km Polygon points = 2	1.
10-19% of 1 km Polygon points = 1	1.
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
70	1
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)	-2
≤ 50% of 1 km 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:4-6 = H1-3 = 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	
It has 3 or more priority habitats within 100 m (see next page)	
It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	
It is mapped as a location for an individual WDFW priority species	
It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	1
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) within 100 m  points = 1	1
Site does not meet any of the criteria above points = 0	1

Rating of Value If score is:  $2 = H \times 1 = M = 0 = L$ 

### **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

RATII	NG SUM	MARY -	- Wester	rn Wa	shington
Name of wetland (	or ID#): BA2	TAL-19	572 ed by Ecology?	Date o	of site visit: 19/19/15 No Date of training 4/1
					M classes?Y $X$ _N
	is not complete f base aerial pho		figures request	ted (figures	s can be combined).
VERALL WETLA	ND CATEGO	RY II (ba	ased on functio	ons_Xor s	pecial characteristics_
1. Category of v					
	<b>Category I</b> – Tot <b>Category II –</b> To <b>Category III –</b> To	tal score = 20	- 22		Score for each function based on three
	Category III – To				ratings   (order of ratings   is not
FUNCTION	Improving Water Quality	Hydrologic	Habitat		important) 9 = H,H,H
		Circle the ap	propriate ratings		8 = H,H,M
Site Potential	H (M) L	H (M) L	H M D		7 = H,H,L
Landscape Potential	н (M) L	H (M) L	H M (C)		7 = H,M,M
Value	H) M L	H M) L	H M L	TOTAL	6 = H,M,L
Score Based on Ratings	7	6	Ÿ	17	6 = M,M,M 5 = H,L,L 5 = M,M,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY			
Estuarine	1 11			
Wetland of High Conservation Value	I			
Bog	I			
Mature Forest	I			
Old Growth Forest	I			
Coastal Lagoon	I II			
Interdunal	I II III IV			
None of the above				

4 = M,L,L 3 = L,L,L

# Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
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 (can be added to another figure)	R 2.4	101 -
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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 <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	5 4.1	
Boundary of 150 ft buffer (can be added to another figure)	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)	5 3.3	

### **HGM Classification of Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated. If the 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?  $NO \neq go to 2$ 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.

Wetland name or number 6A2

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

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

ES - 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.

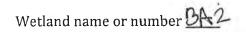
HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake 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.

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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	0
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	Ø
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ¼ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 2  points = 0	4
Total for D 1 Add the points in the boxes above	10
Rating of Site Potential If score is:12-16 = H	ø l
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?  Source Small road  Yes = 1 No = 0	1
Total for D 2 Add the points in the boxes above	12
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the f	irst page
D 3.0. Is the water quality improvement provided by the site valuable to society?	1
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	d
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	
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 = $2 \text{ No} = 0$	2
Total for D 3 Add the points in the boxes above	3
Rating of Value If score is: \( \frac{1}{2} - 4 = H \) \( \frac{1}{2} = M \) \( \frac{0}{2} = L \) Record the rating on the first page	

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degrada	tion
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	Ø
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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)	<b>B</b> 3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	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	e first page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	Ø
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	
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	ø
Total for D 5 Add the points in the boxes above	
Rating of Landscape Potential If score is: 3 = H 10 r 2 = M 0 = L Record the rating on the	e 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2  • Surface flooding problems are in a sub-basin farther down-gradient. points = 1  Flooding from groundwater is an issue in the sub-basin. points = 1  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  There are no problems with flooding downstream of the wetland.	1
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	10
Yes = 2 No = 0	+ +
Total for D 6  Add the points in the boxes above	1 1

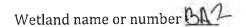
Rating of Value If score is: \_\_\_2-4 = H \( \sum\_1 = M \)



### 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. 4 structures or more: points = 4 Aquatic bed 3 structures: points = 2 Emergent 2 structures: points = 1 X Scrub-shrub (areas where shrubs have > 30% cover) 1 structure: points = 0 \_Forested (areas where trees have > 30% cover) 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). 4 or more types present: points = 3 Permanently flooded or inundated 3 types present: points = 2 Seasonally flooded or inundated 2 types present: points = 1 Occasionally flooded or inundated 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 2 points Freshwater tidal wetland H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 2 If you counted: > 19 species points = 1 5 - 19 species points = 0 < 5 species 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. Moderate = 2 points Low = 1 point None = 0 points All three diagrams in this row are HIGH = 3points

13

	-
H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
arge, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	1
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	1
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of	
strata)	
Total for H 1 Add the points in the boxes above	3
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 functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat+ [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$> \frac{1}{3} (33.3\%) \text{ of } 1 \text{ km Polygon}$ points = 3	0
20-33% of 1 km Polygon points = 2	44
10-19% of 1 km Polygon points = 1	
10 10 10 11 11 11 11 11 11 11 11 11 11 1	
· 20/0 G. 2 IMIT GIJBON	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  **Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
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	4
H 2.3. Land use intensity in 1 km Polygon: If	7
> 50% of 1 km Polygon is high intensity land use points = (-2)	- 6
≤ 50% of 1 km Polygon is high intensity points = 0	- 25
Total for H 2 Add the points in the boxes above	$\varphi$
Rating of Landscape Potential If score is:4-6 = H1-3 = M<1 = L Record the rating on t	he 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	
— It has 3 or more priority habitats within 100 m (see next page)	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> </ul>	1
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  — 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) within 100 m	
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
Rating of Value If score is: $2 = H$ $1 = M$ $0 = L$ Record the rating on	the Just 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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): Wotland	Date of site visit:/ 15/16
Rated by ) MAKRIOH Train	ned by Ecology? Yes No Date of training 4/15
HGM Class used for rating Depressional	Wetland has multiple HGM classes?YN
NOTE: Form is not complete without the Source of base aerial photo/map	figures requested (figures can be combined).
OVERALL WETLAND CATEGORY(b	pased on functions or special characteristics)

### 1. Category of wetland based on FUNCTIONS

	<b>Category I</b> – Total score = 23 - 27
	_Category II - Total score = 20 - 22
<del>-\</del>	_Category III - Total score = 16 - 19
_ X_	_Category IV — Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic		Habitat				
		_			Circle	the ap	propi	iate ra	tings	
Site Potential	Н	(M)	L	Н	М	(9)	Н	М	(L)	
Landscape Potential	Н	(M)		Н	М	(L)	Н	M	(1)	
Value	(F)	М	L	Н	M	L	Н	M	~	TOTAL
Score Based on Ratings			7		4			4		15-

### Score for each function based on three ratings (order of ratings is not *important)* 9 = H,H,H8 = H, H, M7 = H, H, L7 = H,M,M6 = H,M,L 6 = M, M, M5 = H,L,L5 = M,M,L4 = M, L, L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY			
Estuarine	I II			
Wetland of High Conservation Value	I			
Bog	I			
Mature Forest	I			
Old Growth Forest	I			
Coastal Lagoon	I II			
Interdunal	I II III IV			
None of the above				



DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	(a)
ວ 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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.  points = 1	2
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is < ½ total area of wetland  points = 2  points = 0	4
Total for D 1 Add the points in the boxes above	9
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the first potential to support the water quality function of the site?	ige
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?  Source Hoj. to Gravel road, Next held Gug. when for cogs Yes = 1 No = 0	1
Total for D 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M9 = L Record the rating on the fin	rst 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 = $1 \text{ No} = 0$	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 = $2 \text{ No} = 0$	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is: 2-4 = H \_\_1 = M \_\_0 = L

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
ع 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 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 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	2
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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)	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.  The area of the basin is less than 10 times the area of the unit  points = 5  The area of the basin is 10 to 100 times the area of the unit  points = 3  The area of the basin is more than 100 times the area of the unit  points = 0  Entire wetland is in the Flats class	3
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
כ 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
$\cup$ 5.1. Does the wetland 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 = H1 or 2 = M0 = 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.	
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	
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 = $2 \text{ No} = 0$	0
Total for D 6 Add the points in the boxes above	

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

ating of Value If score is:  $_2-4 = H \times _1 = M = _0 = L$ 

### 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. 4 structures or more: points = 4 Aquatic bed X Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 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). Permanently flooded or inundated 4 or more types present: points = 3 \_\_Seasonally flooded or inundated 3 types present: points $\approx$ 2 Occasionally flooded or inundated 2 types present: points = 1 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland \_\_Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland Freshwater tidal wetland 2 points 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. Different patches of the same species can be combined to meet the size threshold and you do not have to name 0 the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species points = 2 points = 1 5 - 19 species < 5 species points = 0H 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. Moderate = 2 points None = 0 points Low = 1 point All three diagrams in this row are **HIGH** = 3points

<u> </u>	- /
H 1.5, Special habitat features:	V
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	1
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
X 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	2
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = %	
If total accessible habitat is:	
$> \frac{1}{3}$ (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: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
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  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)	2
$\leq$ 50% of 1 km Polygon is high intensity and use points = 0	- 2
	n
Total for H 2  Add the points in the boxes above  Rating of Landscape Potential If score is:4-6 = H1-3 = M	he first nage
	,
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	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	. 1
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> </ul>	1
— It is mapped as a location for an individual WDFW priority species	
It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	1
— 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) within 100 m points = 1	
	-
Site does not meet any of the criteria above points = 0	
ating of Value If score is:2 = H (X)1 = M0 = L Record the rating on	the first page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>Wetland BS TAL 1572</u> Date of site visit: <u>V15/16</u>
Rated by J Marker Trained by Ecology? Yes No Date of training 4/15
HGM Class used for rating perkessional Wetland has multiple HGM classes?YXN
NOTE: Form is not complete without the figures requested (figures can be combined).  Source of base aerial photo/map
OVERALL WETLAND CATEGORY (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				Habit			
		7			Circle t	he ap	propr	iate ro	itings	
Site Potential	Н	W	L	Н	(M)	L	Н	M	(L)	
Landscape Potential	Н	(M)	L	Н	(M)	L	Н	(M)	L	
Value	H	M	L	Н	M	L	Н	M	0	TOTAL
Score Based on Ratings		7			0			4		17

### Score for each function based on three ratings (order of ratings is not important) 9 = H,H,H8 = H,H,M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L5 = M,M,L4 = M, L, L3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY		
Estuarine	I II		
Wetland of High Conservation Value	I		
Bog	I		
Mature Forest	I		
Old Growth Forest	I		
Coastal Lagoon	I II		
Interdunal	I II III IV		
None of the above			

DEPRESSIONAL AND FLATS WETLANDS  Water Quality Functions - Indicators that the site functions to improve water quality	7
1.0. Does the site have the potential to improve water quality?	
0 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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	1
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
1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):  Wetland has persistent, ungrazed, plants > 95% of area  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	3
1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 2  points = 0	4
otal for D 1 Add the points in the boxes above	8
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the first potential to support the water quality function of the site?	
2.1. Does the wetland unit receive stormwater discharges?  Yes = 1 No = 0	0
2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	<u>i</u>
2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?  Source Yes = 1 No = 0	0
otal for D 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the fine	rst page
3.0. Is the water quality improvement provided by the site valuable to society?	
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
0.3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the $303(d)$ list? Yes = 1 No = 0	1
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	2
Total for D 3 Add the points in the boxes above	3

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation	on
$\sqrt{4.0.}$ 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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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)	3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	5
Total for D 4 Add the points in the boxes above	8
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the j	first page
5.0. Does the landscape have the potential to support hydrologic functions of the site?	
υ 5.1. Does the wetland 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	
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	1
Rating of Landscape Potential If score is:3 = H \times 1 or 2 = M0 = L Record the rating on the j	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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.	1
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	
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	1

ating of Value If score is:\_\_\_2-4 = H \_\_\_\_1 = M \_\_\_\_0 = L

### These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat . 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. Aquatic bed 4 structures or more: points = 4 Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 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). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points = 1 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland \_Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points Freshwater tidal wetland 2 points 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 15 - 19 species < 5 species points = 0H 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 pointModerate = 2 points All three diagrams in this row are HIGH = 3points

	(
H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
$\frac{\chi}{L}$ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	2-
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
X 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	3
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L Record the rating on s	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	
20-33% of 1 km Polygon points = 2	7
10-19% of 1 km Polygon points = 1	2
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
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)	-2
≤ 50% of 1 km Polygon is high intensity points = 0	
Total for H 2 Add the points in the boxes above	
Rating of Landscape Potential If score is: 4-6 = H X 1-3 = M < 1 = L Record the rating on the	ne 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	
— It has 3 or more priority habitats within 100 m (see next page)	
It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	0
- It is mapped as a location for an individual WDFW priority species	
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
It has been categorized as an important habitat site in a local or regional comprehensive plan, in a  Shareling Mester Plan, or in a watershad plan.	
Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m  points = 1	
Site does not meet any of the criteria above points = 0	+b = 6:==+ =====

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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 alsewhere.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): Wetlax	nd BJ (South) 1572C Date of site visit: 1/15/16
Rated by $VNJMM$	Trained by Ecology? $\times$ YesNo Date of training $3/16$
HGM Class used for rating Dep No.	Wetland has multiple HGM classes?Y X_N
NOTE: Form is not complete source of base aerial photo	without the figures requested (figures can be combined).
OVERALL WETLAND CATEGOR	RY (based on functions or special characteristics)
1. Category of wetland based	on FUNCTIONS

	<b>_Category I</b> — Total score = 23 - 27
	_Category II — Total score = 20 - 22
<u>X</u>	_Category III - Total score = 16 - 19
	_Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality		Hydrologic		Habitat					
	Circle the appropriate ratings									
Site Potential	Н	(W)	L	Н	М	(1)	Н	М	0	
Landscape Potential	Н	M	L	Н	M	L	Н	М	0	
Value	(H)	М	L	Н	M	L	Н	M	L	TOTAL
Score Based on Ratings		7			5			4		16

### Score for each function based on three ratings (order of ratings is not important) 9 = H,H,H8 = H,H,M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = 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	I II		
Wetland of High Conservation Value	I		
Bog	I		
Mature Forest	I		
Old Growth Forest	I		
Coastal Lagoon	I II		
Interdunal	I II III IV		
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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
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	The same
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	-
polygons for accessible habitat and undisturbed habitat		
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 Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated. If the 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. **YES** – The wetland class is **Flats** NO<sub>2</sub>- go to 3 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.

# Wetland name or number BS (So wth)

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	Treat as
class of freshwater wetland	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.

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding	ng and stream degradation	on
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permaner  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently	ng ditch points = 1	0
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)		0
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area contributing surface water to the wetland to the area of the wetland unit itself.  The area of the basin is less than 10 times the area of the unit  The area of the basin is 10 to 100 times the area of the unit  The area of the basin is more than 100 times the area of the unit  Entire wetland is in the Flats class	points = 5 points = 3 points = 0 points = 5	3
	nts in the boxes above	3
Rating of Site Potential   If score is:12-16 = H6-11 = M0-5 = L	Record the rating on the f	irst page
D 5.0. Does the landscape have the potential to support hydrologic functions of the s	ite?	
D 5.1. Does the wetland 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 runo	off? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive huma >1 residence/ac, urban, commercial, agriculture, etc.)?	an land uses (residential at Yes = 1 No = 0	0
Total for D 5 Add the poi	nts in the boxes above	1
Rating of Landscape Potential If score is:3 = H1 or 2 = M0 = L	Record the rating on the f	irst pag
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 the wetland unit being rated. Do not add points. Choose the highest score if more than The wetland captures surface water that would otherwise flow down-gradient into are damaged human or natural resources (e.g., houses or salmon redds):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin.  The existing or potential outflow from the wetland is so constrained by human or natural water stored by the wetland cannot reach areas that flood. Explain why  There are no problems with flooding downstream of the wetland.	points = 1 points = 1	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a reg		
. So sizi mas and size been rachanica as important for moda storage or moda conveyance in a rep	process mode vorition prairie	0
	Yes = 2 No = 0	

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	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2	1
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 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	
Wetland has persistent, ungrazed, plants > ½ of area points = 3	5
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area points = 1	-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Wetland has persistent, ungrazed plants $<^1/_{10}$ of area points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:	
This is the area that is ponded for at least 2 months. See description in manual.	
Area seasonally ponded is > ½ total area of wetland points = 4	1-
Area seasonally ponded is > 1/4 total area of wetland points = 2	4
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 26-11 = M 0-5 = L Record the rating on the first page	e
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. ls > 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?  Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	ĺ
Rating of Landscape Potential If score is:3 or 4 = H \1 or 2 = M0 = L Record the rating on the first	t 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	2
Total for D 3  Add the points in the boxes above	3
Rating of Value If score is: X 2-4 = H1 = M0 = 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. Aquatic bed 4 structures or more: points = 4 X Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 \_\_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). Permanently flooded or inundated 4 or more types present: points = 3 X Seasonally flooded or inundated 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points = 1 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points 2 points Freshwater tidal wetland H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 0 If you counted: > 19 species points = 25 - 19 species points = 1points = 0< 5 species 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. Moderate = 2 points None = 0 points Low = 1 point All three diagrams in this row are HIGH = 3points

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	3
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 3.3 ft (10 m)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	0
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of	
strata)	
Total for H 1 Add the points in the boxes above	0
Rating of Site Potential If score is:15-18 = H7-14 = M	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	71
If total accessible habitat is:	11 11
$>$ $^{1}/_{3}$ (33.3%) of 1 km Polygon points = 3	
20-33% of 1 km Polygon points = 2	1
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.	
	1
Undisturbed habitat 10-50% and in 1-3 patches  Undisturbed habitat 10-50% and a 3 patches	(
Undisturbed habitat 10-50% and > 3 patches  Undisturbed habitat < 10% of 1 km Polyson	
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)	- 2
≤ 50% of 1 km 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:4-6 = H1-3 = M X < 1 = L Record the rating on the	ne 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	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</li> </ul>	
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	1 1
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> </ul>	1
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensive plan, in a</li> </ul>	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1	
Site does not meet any of the criteria above points = 0	
Rating of Value If score is: $2 = H \times 1 = M$ $0 = I$	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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?  — The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to <b>SC 1.1</b> No= <b>Not an estuarine wetland</b>	
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? Yes = Category I No - Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
<ul> <li>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 Spartina, see page 25)</li> <li>At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-</li> </ul>	Cat. I
mowed grassland.  — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.  Yes = Category I  No = Category II	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV)	1
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3	Cat. I
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
Yes = Category I No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	1
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a 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?  Yes = Category I No = Not a WHCV	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you answer YES you will still need to rate the wetland based on its functions.	
SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or	1
more of the first 32 in of the soil profile? Yes – Go to SC 3.3 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? Yes – Go to SC 3.3 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?  Yes = Is a Category I bog 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.	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	1
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?	
Yes = Is a Category I bog No = Is not a bog	

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA	
Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate	
the wetland based on its functions.	
— 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.	
- 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).	
Yes = Category I No = Not a forested wetland for this section	Cat. I
GC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	Cat. 1
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)  Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	Cat. I
Fes – Go to Sc 5.1 No = Not a wetland in a coastal lagoon as Sc 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
— 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.	
— The wetland is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )	
Yes = Category I No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
— Long Beach Peninsula: Lands west of SR 103	
— Grayland-Westport: Lands west of SR 105	Cat I
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> </ul>	
Yes – Go to SC 6.1 No = not an interdunal wetland for rating	
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	Cat. I
for the three aspects of function)? Yes = Category I No – Go to SC 6.2	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	Cat II
Yes = Category II No – Go to SC 6.3	Cat. II
CCC2 to the unit between 0.1 and 1 as exist in a massis of wattands that is between 0.1 and 1 as?	
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?	
Yes = Category III No = Category IV	Cat. IV

17

Wetland name or number BS (South)

This page left blank intentionally

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): CE TAL-1572 Date of site visit: 9/19/15
Rated by Marriott, D. Tuesdale Trained by Ecology? Yes \_\_\_ No Date of training HGM Class used for rating Decesional Wetland has multiple HGM classes? \_\_\_ Y X N

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map \_\_\_\_\_\_\_

OVERALL WETLAND CATEGORY \_\_\_\_ (based on functions X or special characteristics \_\_\_)

# 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	100000000000000000000000000000000000000		Improving Hydrologic Habita /ater Quality		Hydrologic				at	
					Circle t	he ap	prop	riate r	atings	
Site Potential	Н	(1)	L	Н	IND	L	Н	М	(1)	
Landscape Potential	Н	M	L	Н	M	L	Н	М	(1)	
Value	(1)	M	L	Н	M	L	Н	M	L	TOTAL
Score Based on Ratings		7			6			4		17

#### Score for each function based on three ratings (order of ratings is not important) 9 = H, H, H8 = H, H, M7 = H,H,L7 = H,M,M6 = H,M,L6 = M, M, M5 = H,L,L5 = M,M,L4 = M, L, L3 = L, L, L

#### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 (can be added to another figure)	R 2.4	J)
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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	1

#### Lake Fringe Wetlands

L 1.1, L 4.1, H 1.1, H 1.4	
1.4.0	
L 1.2	
L 2.2	
H 2.1, H 2.2, H 2.3	
L 3.1, L 3.2	
L 3.3	
	H 2.1, H 2.2, H 2.3

#### 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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the 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 c	ontrolled l	by tides	except (	during f	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.

#### Wetland name or number 📜

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

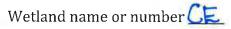
**YES** - The wetland class is **Depressional** 

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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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.



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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.  points = 1	3
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:	
This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > $\frac{1}{2}$ total area of wetland  Area seasonally ponded is > $\frac{1}{2}$ total area of wetland  Area seasonally ponded is < $\frac{1}{2}$ total area of wetland  points = 0	4
Total for D 1 Add the points in the boxes above	10
Rating of Site Potential If score is:12-16 = H $\times$ _6-11 = M0-5 = 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?	<i>је</i>
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	01
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	
D 2.3. Are there septic systems within 250 ft of the wetland?	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?  Source Yes = 1 No = 0	NO
Total for D 2 Add the points in the boxes above	2
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the first D 3.0. Is the water quality improvement provided by the site valuable to society?	st page
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	d
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	
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	2
Total for D 3 Add the points in the boxes above	3
Rating of Value If score is: 2-4 = H 1 = M 0 = L  Record the rating on the first page  TO BOAT RAMP  We Hand	

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

DEPRESSIONAL AND FLATS WETLANDS  Hydrologic Functions - Indicators that the site functions to reduce flooding a	nd stroam dogradati	on
D 4.0. Does the site have the potential to reduce flooding and erosion?	iliu stream degradati	OH
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently to Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing di Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing displayed to the constricted of the constr	tch points = 1	4
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)	points = 7 points = 5 points = 3 points = 3 points = 1 points = 0	$\phi$
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of up contributing surface water to the wetland to the area of the wetland unit itself.  The area of the basin is less than 10 times the area of the unit  The area of the basin is 10 to 100 times the area of the unit  The area of the basin is more than 100 times the area of the unit  Entire wetland is in the Flats class	pstream basin  points = 5  points = 3  points = 0  points = 5	5
Total for D 4 Add the points in	n the boxes above	9
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 functions of the site?		
D 5.1. Does the wetland 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 lar >1 residence/ac, urban, commercial, agriculture, etc.)?	nd uses (residential at Yes = 1 No = 0	Ø
Total for D 5 Add the points in	n the boxes above	2
Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L	Record the rating on the j	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
<ul> <li>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best match the wetland unit being rated. Do not add points. Choose the highest score if more than one. The wetland captures surface water that would otherwise flow down-gradient into areas who damaged human or natural resources (e.g., houses or salmon redds): <ul> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin.</li> </ul> </li> <li>The existing or potential outflow from the wetland is so constrained by human or natural convater stored by the wetland cannot reach areas that flood. Explain why</li></ul>	condition is met. here flooding has  points = 2 points = 1 points = 1	1
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	6
Total for D 6 Add the points in	the boxes above	
Rating of Value If score is:2-4 = H0 = L F	Record the rating on the j	first page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

6

#### 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. \_Aquatic bed 4 structures or more: points = 4 X Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 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). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 3 types present: points = 2 X Occasionally flooded or inundated 2 types present: points = 1 Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland \_\_Lake Fringe wetland 2 points 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 ft<sup>2</sup>. 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 = 25 - 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 pointModerate = 2 points All three diagrams in this row are HIGH = 3points

Wetland name or number CE	Ø				
H 1.5. Special habitat features:					
Check the habitat features that are present in the wetland. The number of checks is the number of points. Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland					
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) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	1				
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)					
Total for H 1 Add the points in the boxes above					
Rating of Site Potential If score is:15-18 = H7-14 = M $\checkmark$ 0-6 = L Record the rating on t	he first page				
H 2.0. Does the landscape have the potential to support the habitat functions of the site?					
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).  Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = %  If total accessible habitat is:	l				
< 10% of 1 km Polygon points = 0					
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = %  Undisturbed habitat > 50% of Polygon	1				

Total for H 2

Rating of Landscape Potential If score is: \_\_\_4-6 = H \_\_\_1-3 = M \_\_\_<1 = L

Record the rating on the first page

points = 0

points = (-2)points = 0

Add the points in the boxes above

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 so that applies to the wetland being rated.	ore
Site meets ANY of the following criteria: points	= 2
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal li</li> <li>It is mapped as a location for an individual WDFW priority species</li> <li>It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</li> <li>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</li> </ul>	sts)
Site has 1 or 2 priority habitats (listed on next page) within 100 m	= 1
Site does not meet any of the criteria above points	= 0

Rating of Value If score is:  $_2 = H$   $_1 = M$   $_0 = L$ 

Undisturbed habitat < 10% of 1 km Polygon

≤ 50% of 1 km Polygon is high intensity

> 50% of 1 km Polygon is high intensity land use

H 2.3. Land use intensity in 1 km Polygon: If

Record the rating on the first page

## **WDFW Priority Habitats**

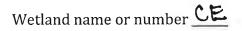
<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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 T	уре		Category
Check off any	criteria that apply to the wetland. Circle the ca	tegory when the appropriate criteria are met.	## 70 To 1
SC 1.0. Estu Does — Th — Ve	arine wetlands the wetland meet the following criteria for Estu ne dominant water regime is tidal, egetated, and	garine wetlands?	
	ith a salinity greater than 0.5 ppt	Yes –Go to SC 1.1 No= Not an estuarine wetland	
		cional Park, National Estuary Reserve, Natural Area for Scientific Reserve designated under WAC 332-30-151? Yes = <b>Category I</b> No - Go to <b>SC 1.2</b>	Cat. I
— T	han 10% cover of non-native plant species. (If r	king, ditching, filling, cultivation, grazing, and has less	Cat. I
<b>—</b> T	nowed grassland. The wetland has at least two of the following fea contiguous freshwater wetlands.	atures: tidal channels, depressions with open water, or Yes = Category I No = Category II	Cat. II
SC 2.1. Has tl Conse SC 2.2. Is the	ervation Value? wetland listed on the WDNR database as a We	ed their website to include the list of Wetlands of High  Yes – Go to SC 2.2  No – Go to SC 2.3  tland of High Conservation Value?  Yes = Category I  No = Not a WHCV	Cat. I
<u>http:</u> SC 2.4. Has V			
SC 3.0. Bog			
Does below SC 3.1. Does more SC 3.2. Does over pond	the wetland (or any part of the unit) meet both v. If you answer YES you will still need to rate t an area within the wetland unit have organic so of the first 32 in of the soil profile? an area within the wetland unit have organic so bedrock, or an impermeable hardpan such as cl?	oil horizons, either peats or mucks, that compose 16 in or Yes – Go to SC 3.3 No – Go to SC 3.2 oils, either peats or mucks, that are less than 16 in deep ay or volcanic ash, or that are floating on top of a lake or Yes – Go to SC 3.3 No = Is not a bog	
cover <b>NOTE</b> meas plant	of plant species listed in Table 4? If you are uncertain about the extent of mossibilities of the water that seeps into a hole species in Table 4 are present, the wetland is a		Cat. I
west	ern hemlock, lodgepole pine, quaking aspen, En	y with Sitka spruce, subalpine fir, western red cedar, gelmann spruce, or western white pine, AND any of the provide more than 30% of the cover under the canopy?  Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands	
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</i>	
<ul> <li>the wetland based on its functions.</li> <li>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.</li> <li>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).</li> </ul>	
Yes = Category I No = Not a forested wetland for this section	Cat. I
C 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?  — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks  — 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 (needs to be measured near the bottom)  Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	Cat. I
C 5.1. Does the wetland meet all of the following three conditions?	
<ul> <li>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).</li> <li>At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</li> </ul>	Cat. II
— The wetland is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )  Yes = Category I  No = Category II	
C 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions.  In practical terms that means the following geographic areas:	
<ul> <li>Long Beach Peninsula: Lands west of SR 103</li> <li>Grayland-Westport: Lands west of SR 105</li> </ul>	Cat I
— Ocean Shores-Copalis: Lands west of SR 115 and SR 109	
Yes – Go to SC 6.1 No = not an interdunal wetland for rating	
C 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)?  Yes = Category!  No – Go to SC 6.2	Cat. II
C 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?  Yes = Category II No – Go to SC 6.3	Cat. II
C 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?  Yes = Category III No = Category IV	Cat. IV

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): CG TAL-1573 Date of site visit: 15/19/15

Rated by T. Mariott, D. Tresdale Trained by Ecology? X Yes \_\_\_\_ No Date of training 15

HGM Class used for rating Depressional Wetland has multiple HGM classes? \_\_\_ Y X N

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map \_\_\_\_\_\_\_

OVERALL WETLAND CATEGORY (based on functions X or special characteristics )

#### 1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION		npro ter Q	ving uality	H	ydrologic		Habitat	
					Circle the ap	prop	riate ratings	
Site Potential	Н	(M)	L	Н	M) L	Н	M (D	
Landscape Potential	Н	M	0	Н	M D	Н	М	
Value	H	М	L	Н	ML	Н	M	TOTAL
Score Based on Ratings			2		5		4	15

#### Score for each function based on three ratings (order of ratings is not *important)* 9 = H,H,H8 = H,H,M7 = H,H,L7 = H, M, M6 = H,M,L6 = M, M, M5 = H, L, L5 = M,M,L4 = M, L, L3 = L, L, L

#### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	I II	
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	I II	
Interdunal	I II III IV	
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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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)	\$ 3.3	

# **HGM Classification of Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated.

ŗ		IGM classes. In this ca	oly to the entire unit being rated, you ase, identify which hydrologic criteria in	
1.	Are the water levels in the entire u	nit usually controlled	by tides except during floods?	
	10- go to 2	<b>YES</b> – the wetla	and class is <b>Tidal Fringe</b> – go to 1.1	
-	1.1 Is the salinity of the water during	g periods of annual lov	w flow below 0.5 ppt (parts per thousand)?	
		is a Freshwater Tidal F E <b>stuarine</b> wetland and	<b>YES – Freshwater Tidal Fringe</b> Fringe use the forms for <b>Riverine</b> wetlands. If It is not scored. This method <b>cannot</b> be used to	
2.	The entire wetland unit is flat and and surface water runoff are NOT	= -	nly source (>90%) of water to it. Groundwate e unit.	er
	NO go to 3 If your wetland can be classified as	a Flats wetland, use th	<b>YES</b> – The wetland class is <b>Flats</b> are form for <b>Depressional</b> wetlands.	
3.	Does the entire wetland unit <b>meet</b> The vegetated part of the wetland plants on the surface at any time. At least 30% of the open water at a surface.	nd is on the shores of a e of the year) at least 2	a body of permanent open water (without an 20 ac   (8 ha) in size;	у
	NO go to 4 YE	<b>S</b> – The wetland class i	is <b>Lake Fringe</b> (Lacustrine Fringe)	
4.	Does the entire wetland unit <b>meet</b> The wetland is on a slope ( <i>slope</i> ) The water flows through the water seeps. It may flow subsurface, andThe water leaves the wetland water leaves the wetland water leaves.	e can be very gradual), etland in one direction as sheetflow, or in a sv	, n (unidirectional) and usually comes from wale without distinct banks,	
	NO go to 5		<b>YES</b> – The wetland class is <b>Slope</b>	
	<del>-</del>		lands except occasionally in very small and are usually <3 ft diameter and less than 1 ft	
5.	Does the entire wetland unit <b>meet</b> The unit is in a valley, or stream stream or river,The overbank flooding occurs a	n channel, where it get	ts inundated by overbank flooding from that	

# Wetland name or number CG

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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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.

DEPRESSIONAL AND FLATS WETLANDS	7
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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
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	(2)
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ¼ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 2  points = 0	4
Total for D 1 Add the points in the boxes above	+
Rating of Site Potential If score is:12-16 = H	ge
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	Ø
D 2.2. Is $> 10\%$ of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	Ø
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?  Source Yes = 1 No = 0	\$
Total for D 2 Add the points in the boxes above	Ø
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the fire	st 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	Ø
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = $1 \text{ No} = 0$	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	2
Total for D 3 Add the points in the boxes above	3
Rating of Value If score is: 2-4 = H1 = M0 = L Record the rating on the first page	

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation	1
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	2
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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)	3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class	5
Total for D 4 Add the points in the boxes above	[0]
Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first	t page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	Ø
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	Ø
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	ø
Total for D 5 Add the points in the boxes above	$\psi$
Rating of Landscape Potential If score is:3 = H1 or 2 = M \times 0 = L Record the rating on the first	t 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.	1
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  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	$\phi$

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. Aquatic bed 4 structures or more: points = 4 Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 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). Permanently flooded or inundated 4 or more types present: points = 3 X Seasonally flooded or inundated 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points = 1 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points 2 points Freshwater tidal wetland H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 1 5 - 19 species points = 0 < 5 species 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 All three diagrams in this row are HIGH = 3points

CIC

0			,	
Y	(	7	)	

Wetland name or number 28_		Ø
H 1.5. Special habitat features:  Check the habitat features that are present in the wetland. The number of Large, downed, woody debris within the wetland (> 4 in diameter and Standing snags (dbh > 4 in) within the wetland  Undercut banks are present for at least 6.6 ft (2 m) and/or overhangin over a stream (or ditch) in, or contiguous with the wetland, for at least Stable steep banks of fine material that might be used by beaver or m slope) OR signs of recent beaver activity are present (cut shrubs or tree	6 ft long).  ng plants extends at least 3.3 ft (1 m) st 33 ft (10 m) uskrat for denning (> 30 degree	3
where wood is exposed) At least ¼ ac of thin-stemmed persistent plants or woody branches are permanently or seasonally inundated (structures for egg-laying by an	e present in areas that are mphibians)	
Total for H 1	Add the points in the boxes above	3
Rating of Site Potential	Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functi	ions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat + [(% moderate and low inte If total accessible habitat is: $> \frac{1}{3}$ (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon < 10% of 1 km Polygon	points = 3 points = 2 points = 1 points = 0	1

% undisturbed habitat \_\_\_\_ + [(% moderate and low intensity land uses)/2] \_\_\_ = \_\_\_

Total for H 2 Rating of Landscape Potential If score is: \_\_\_4-6 = H \_\_\_1-3 = M \times < 1 = L

H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.

Undisturbed habitat 10-50% and in 1-3 patches

> 50% of 1 km Polygon is high intensity land use

Undisturbed habitat 10-50% and > 3 patches

Undisturbed habitat < 10% of 1 km Polygon

Undisturbed habitat > 50% of Polygon

≤ 50% of 1 km Polygon is high intensity

H 2.3. Land use intensity in 1 km Polygon: If

Calculate:

Record the rating on the first page

points = 3

points = 2 points = 1

points = 0

points = (-2)

Add the points in the boxes above

points = 0

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 of	only the highest score	
that applies to the wetland being rated.		
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>		
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the</li> </ul>	e state or federal lists)	1
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	(1)	
<ul> <li>It is a Wetland of High Conservation Value as determined by the Department of Natu</li> </ul>	ural Resources	•
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehen</li> </ul>	sive plan, in a	
Shoreline Master Plan, or in a watershed plan		
Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1	
Site does not meet any of the criteria above	points = 0	
	- 1.1 .1 .1	c

Rating of Value If score is:  $_2 = H$   $_1 = M$   $_0 = L$ 

Record the rating on the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	100 miles
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 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?  Yes = Category I No - Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
<ul> <li>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 Spartina, see page 25)</li> <li>At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-</li> </ul>	Cat. I
mowed grassland.	Cat. II
— The wetland has at least two of the following features: tidal channels, depressions with open water, or	
contiguous freshwater wetlands. Yes = Category I 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? Yes – Go to SC 2.2 No – Go to SC 2.3	Cat. I
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
Yes = Category I No = Not a 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	
Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a 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?  Yes = Category I No = Not a WHCV	
SC 3.0. Bogs	100
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below.</i> If you answer YES you will still need to rate the wetland based on its functions.	
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? Yes – Go to SC 3.3 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?  Yes – Go to SC 3.3  No = Is not a bog	
5C 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? Yes = Is a Category I bog 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	Cat. I
plant species in Table 4 are present, the wetland is a bog.	Cat. I
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?	
	1

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA				
Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate				
the wetland based on its functions.				
— 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.				
— 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).				
Yes = Category I No = Not a forested wetland for this section	Cat. I			
5.0. Wetlands in Coastal Lagoons				
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?				
The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from				
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks				
— 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 (needs to be measured near the bottom)	Cat.			
Yes – Go to <b>SC 5.1</b> No = <b>Not a wetland in a coastal lagoon</b>				
5.1. Does the wetland meet all of the following three conditions?				
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	Cat. I			
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).				
— 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.				
— The wetland is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )				
Yes = Category I No = Category II				
6.0. Interdunal Wetlands				
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If				
you answer yes you will still need to rate the wetland based on its habitat functions.				
In practical terms that means the following geographic areas:				
Long Beach Peninsula: Lands west of SR 103	Cat I			
— Grayland-Westport: Lands west of SR 105				
<ul> <li>Ocean Shores-Copalis: Lands west of SR 115 and SR 109</li> <li>Yes – Go to SC 6.1</li> <li>No = not an interdunal wetland for rating</li> </ul>				
163 - GO (O Se O.1 NO - Not all interdunal westalla for rusing				
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	Cat. I			
for the three aspects of function)? Yes = Category I No – Go to SC 6.2				
6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?				
Yes = Category II No – Go to SC 6.3	Cat. I			
9 /				
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?				
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?  Yes = Category III No = Category IV	Cat. I			

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): Wetland DE TAL·1572 Date of site visit: 1/20/16

Rated by 1. Markio# Trained by Ecology? X Yes \_\_No Date of training 4/15

HGM Class used for rating Depkessional Wetland has multiple HGM classes? \_\_Y X N

**NOTE**: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map

**OVERALL WETLAND CATEGORY** \_\_\_\_\_ (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		mprov iter Qi	ing uality	Н	ydrolo	gic		Habit	tat	
					Circle	the ap	propr	iate r	atings	
Site Potential	Н	0	L	Н	(M)	L	Н	M	0	
Landscape Potential	H	M	L	Н	M	L	Н	M	(1)	
Value	(H)	M	L	Н	M	L	Н	М	0	TOTAL
Score Based on Ratings		7			6			3		16

#### Score for each function based on three ratings (order of ratings is not *important)* 9 = H,H,H8 = H,H,M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L5 = M,M,L4 = M,L,L3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY		
Estuarine	I II		
Wetland of High Conservation Value	I		
Bog	I		
Mature Forest	ı		
Old Growth Forest	I		
Coastal Lagoon	I II		
Interdunal	I II III IV		
None of the above			

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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.  points = 1	2
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 Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ¼ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 0	2
Total for D 1 Add the points in the boxes above	17
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the first potential to support the water quality function of the site?	age —————
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	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?  Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the fill D 3.0. Is the water quality improvement provided by the site valuable to society?	irst page
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	1
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 = $2 \text{ No} = 0$	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is:  $\angle 2-4 = H$   $\underline{1} = M$   $\underline{0} = L$ 

Record the rating on the first page

DEDDESSIONAL AND FLATS WITH ANDS	
DEPRESSIONAL AND FLATS WETLANDS  Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradate	rion
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	2
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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	3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	8
Rating of Site Potential If score is:12-16 = H	first page
) 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland 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	
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	2
Rating of Landscape Potential If score is:3 = HX1 or 2 = M0 = L	e 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.  The points are not return and it is a constant in a sub-basin are not return and it is an around the basin are not return and it is an around the basin.	1
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	
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	1

ating 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. Aquatic bed 4 structures or more: points = 4 Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 X Forested (areas where trees have > 30% cover) 1 structure: points = 0 If the unit has a Forested class, check if: X 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). Permanently flooded or inundated 4 or more types present: points = 3 X Seasonally flooded or inundated 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points = 1 \_Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 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 ft<sup>2</sup>. 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 points = 1 5 - 19 species points = 0 < 5 species 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. Moderate = 2 points None = 0 points Low = 1 pointAll three diagrams in this row are **HIGH** = 3points

	_
H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	M 1
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)	i i
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	1
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	
where wood is exposed)	1
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of	
strata)	_
Total for H 1 Add the points in the boxes above	3
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	1
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: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
Undisturbed habitat > 50% of Polygon points = 3	
Undisturbed habitat 10-50% and in 1-3 patches points = 2	l
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)	2
	- 2
$\leq$ 50% of 1 km 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:4-6 = H1-3 = M \ \times < 1 = L \ Record the rating on the	ie jirst 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	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	_
<ul> <li>It is mapped as a location for an individual WDFW priority species</li> </ul>	$\mathcal{O}$
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
— 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) within 100 m	
Site does not meet any of the criteria above points = 0	
sating of Value If score is: $2 = H$ $1 = M$ $\sqrt{0} = I$	the first page

## **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>Wetland DF/DG/DH/DJ TAL 1572</u> Date of site visit: <u>1/20/16</u>

Rated by <u>A. Marrivett</u> Trained by Ecology? <u>Y</u> Yes \_\_\_ No Date of training <u>4/15</u>

HGM Class used for rating <u>Depressional</u> Wetland has multiple HGM classes? \_\_ Y <u>X</u> N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map

OVERALL WETLAND CATEGORY \_\_\_\_\_ (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					
	Circle the appropriate ratings									
Site Potential	Н	(M)	L	Н	M	L	Н	M	0	
Landscape Potential	Н	M	L	Н	M	L	Н	М	0	
Value	H	M	L	Н	M	L	Н	М	0	TOTAL
Score Based on Ratings		1			6			3		16

#### Score for each function based on three ratings (order of ratings is not important) 9 = H, H, H8 = H, H, M7 = H, H, L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L5 = M,M,L4 = M,L,L3 = L, L, L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY		
Estuarine	I	II	
Wetland of High Conservation Value	I		
Bog	I		
Mature Forest	I		
Old Growth Forest	I		
Coastal Lagoon	I	II	
Interdunal	I II	III IV	
None of the above			

2/9/16

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	- 5
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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	3
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area points = 1  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ¼ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 2  Area seasonally ponded is < ¼ total area of wetland  points = 0	4
Total for D 1 Add the points in the boxes above	10
Rating of Site Potential If score is: 12-16 = H 26-11 = M 0-5 = L Record the rating on the first pa	ge
ے 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. ls > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 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?  Source	0
Total for D 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the fire	st 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?	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	(
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	2
Total for D 3 Add the points in the boxes above	3
Rating of Value If score is: 2-4 = H1 = M0 = L Record the rating on the first page	

DEPRESSIONAL AND FLATS WETLANDS  Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradations.	on
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	4
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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	3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	10
Rating of Site Potential If score is: 12-16 = H 26-11 = M 0-5 = L Record the rating on the fi	irst page
) 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland 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	
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	2
Rating of Landscape Potential If score is:3 = H1 or 2 = M0 = L Record the rating on the factors are strongly as a second transfer of the strong or the factors are strongly as a second transfer or the strong or the factors are strongly as a second transfer or the strong or the factors are strongly as a second transfer or the strongly are strongly as a second transfer or the strongl	irst 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2  • Surface flooding problems are in a sub-basin farther down-gradient. points = 1  Flooding from groundwater is an issue in the sub-basin. points = 1  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  There are no problems with flooding downstream of the wetland. points = 0	1
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	1

#### 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. 4 structures or more: points = 4 Aquatic bed 3 structures: points = 2 Emergent Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 1 structure: points = 0 X Forested (areas where trees have > 30% cover) 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). 4 or more types present: points = 3 Permanently flooded or inundated 3 types present: points = 2 Seasonally flooded or inundated Occasionally flooded or inundated 2 types present: points = 1 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 2 points Freshwater tidal wetland H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 2 If you counted: > 19 species points = 1 5 - 19 species points = 0 < 5 species 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. Moderate = 2 points None = 0 points Low = 1 pointAll three diagrams in this row are HIGH = 3points

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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 3.3 ft (1 m)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	4
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of	
Strata)  Total for H 1  Add the points in the boxes above	2
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L	tne jirst page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	1
20-33% of 1 km Polygon points = 2	1
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
4 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
· -	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
Undisturbed habitat > 50% of Polygon points = 3	1
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)	1-2
≤ 50% of 1 km 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:4-6 = H1-3 = M<1 = L Record the rating on the	he 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	
— It has 3 or more priority habitats within 100 m (see next page)	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	_
It is mapped as a location for an individual WDFW priority species	0
It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
— 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) within 100 m points = 1	
Site does not meet any of the criteria above points = 0	

Kating of Value If score is: \_\_2 = H \_\_\_1 = M \_\_\_0 = L

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): wetto		
Rated by J. Marrio H	Trained by Ecology?_	$\chi$ YesNo Date of training $\frac{4.15}{1}$
HGM Class used for rating pepres	wetland has m	nultiple HGM classes?YN
NOTE: Form is not complete v Source of base aerial photo		
OVERALL WETLAND CATEGOR	<b>Y</b> (based on functio	ns $\underline{\chi}$ or special characteristics)
1. Category of wetland based of	n 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						Habitat			
				(	Circle t	he ap	propr	iate re	atings	
Site Potential	Н	M	L	H	М	L	Н	M	(U	
Landscape Potential	Н	M	L	Н	Ø	L	Н	М	(1)	
Value	(H)	М	L	Н	M	L	Н	М	0	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,H8 = H, H, M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L 5 = M,M,L 4 = M,L,L3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	×

### **HGM Classification of Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated. If the 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? NQ – 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.  $\sqrt{0}$  – 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

\_\_\_The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that

stream or river.

5. Does the entire wetland unit **meet all** of the following criteria?

The overbank flooding occurs at least once every 2 years.

Wetland name or number  $\mathcal{D}^{\mathcal{J}}$ 

(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.

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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	3
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 1  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is < ½ total area of wetland  Area seasonally ponded is < ½ total area of wetland  points = 0	2
Total for D 1 Add the points in the boxes above	8
Rating of Site Potential If score is:12-16 = H $\underline{\hspace{0.1cm} \hspace{0.1cm} $	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	(
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?  Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the fit  D 3.0. Is the water quality improvement provided by the site valuable to society?	rst pag
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
	2
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	

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) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet 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)  D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin 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 unit Points = 5 The area of the basin is 10 to 100 times the area of the unit Points = 5 The area of the basin is nore than 100 times the area of the unit Points = 5 Total for D 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 functions of the site?  D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 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  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, commer	DEPRESSIONAL AND FLATS WETLANDS	
D 4.1. Characteristics of surface water outflows from the wetland:  Wetland is a depression of flat depression with osurface water leaving it (no outlet)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing on 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 between 2 ft to < 3 ft from surface or bottom of outlet  Marks of ponding between 2 ft to < 2 ft from surface or bottom of outlet  Marks of ponding less than 0.5 ft (6 in)  Wetland is all abut has small depressions on the surface that trap water  points = 3  Wetland is flat but has small depressions on the surface that trap water  points = 3  Wetland is flat but has small depressions on the surface that trap water  points = 3  Wetland is a "headwater" wetland  Wetland is flat but has small depressions on the surface that trap water  points = 3  D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface waters to the wetland to the area of the unit  points = 5  Total for D 4  Add the points in the boxes above //  Rating of Site Potential If score is;	Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation	on
Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing outlet points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing outlet points = 1 D. 4. Denth of storage during wet periodis. 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 = 5 Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 5 The wetland is a "fine advater" wetland 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 unit 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 unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 5 The area of the basin is sure than 100 times the area of the unit points = 5 The area of the basin is more than 100 times the area of the unit points = 5 The area of the basin is more than 100 times the area of the unit points = 5 Total for D 4  Rating of Site Potential If score is: **\frac{12-16-H}{16-11-M}\$ Os-5-L  Record the rating on the first page  D. 5.0. Does the landscape have the potential to support hydrologic functions of the site?  D. 5.1. Does the wetland receive stormwater discharges?  Yes = 1 No = 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  D. 5.3. Is more than 25% of the contributing basin of the wetland covered with	D 4.0. Does the site have the potential to reduce flooding and erosion?	
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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland Wetland is filat but has small depressions on the surface that trap water points = 1 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. The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is 10 to 100 times the area of the unit points = 0 D 5.0. Does the landscape have the potential to support hydrologic functions of the site?  D 5.1. Does the wetland receive stormwater discharges?  D 5.2. Is > 10% of the area within 150 ft of the wetland unit unit is not the site?  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.)?  Rating of Landscape Potential If score is: 3 = H 10 = 0 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 reads):  • Flooding from groundwater is an issue in the sub-basin. 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 fl	Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1	4
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 5  Entire wetland is in the Flats class  Total for D 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 functions of the site?  D. 5.1. Does the wetland receive stormwater discharges?  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  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.)?  D. 6.0. Are the hydrologic functions provided by the site valuable to society?  D. 6.1. The unit is in a landscape Phath has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the description that best matches conditions admaged human or natural resources (e.g., houses or salmon redds):  P. Flooding occurs in a sub-basin that is immediately down-gradient of unit.  Points = 1  Flooding from groundwater is an issue in the sub-basin.  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  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	Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  The wetland is a "headwater" wetland points = 3  Wetland is flat but has small depressions on the surface that trap water points = 1	3
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L	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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?  D 5.1. Does the wetland receive stormwater discharges?  Yes = 1 No = 0  D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?  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.)?  Total for D 5  Add the points in the boxes above  Rating of Landscape Potential If score is:3 = H		
D 5.1. Does the wetland receive stormwater discharges?  D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?  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.)?  Total for D 5  Add the points in the boxes above  Rating of Landscape Potential If score is:3 = HX 1 or 2 = M0 = L  B 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  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  There are no problems with flooding downstream of the wetland.  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		irst page
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  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.)?  Total for D 5  Add the points in the boxes above  Rating of Landscape Potential If score is:3 = H		
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.)?  Total for D 5  Rating of Landscape Potential If score is:3 = H	5 5.1. 5005 the Wethird receive startiffication district gastra	0
No = 0   No = 0	5 3.2.15 × 10% of the drea within 250 feet the water.	/
Rating of Landscape Potential If score is:3 = HX_1 or 2 = M0 = L	>1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	0
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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.  points = 1  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  There are no problems with flooding downstream of the wetland.  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		/
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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.  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	Rating of Landscape Potential If score is:3 = H $\times$ _1 or 2 = M0 = L Record the rating on the j	first page
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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.  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	D 6.0. Are the hydrologic functions provided by the site valuable to society?	
There are no problems with flooding downstream of the wetland.  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	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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2  • Surface flooding problems are in a sub-basin farther down-gradient. points = 1  Flooding from groundwater is an issue in the sub-basin. points = 1  The existing or potential outflow from the wetland is so constrained by human or natural conditions that the	1
Yes = 2 No = 0		
Total for D 6 Add the points in the boxes above /		0
	Total for D 6 Add the points in the boxes above	/

#### 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. 4 structures or more: points = 4 \_\_Aquatic bed 3 structures: points = 2 \_Emergent Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 1 structure: points = 0 X Forested (areas where trees have > 30% cover) 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). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 3 types present: points = 2 2 types present: points = 1 Occasionally flooded or inundated Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points 0 2 points Freshwater tidal wetland H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 1 5 - 19 species points = 0 < 5 species 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. Moderate = 2 points None = 0 points Low = 1 point All three diagrams 0 in this row are HIGH = 3points

# Wetland name or number $\underline{\text{DT}}$

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	(
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of	
strata)	
Total for H 1 Add the points in the boxes above	2
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	1 1
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: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
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	- 7
> 50% of 1 km Polygon is high intensity land use points = (-2)	-2
≤ 50% of 1 km 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:4-6 = H1-3 = M<1 = L Record the rating on a	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	
It has 3 or more priority habitats within 100 m (see next page)	
It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	
It is mapped as a location for an individual WDFW priority species	1
It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	1
It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	0
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1	
Site does not meet any of the criteria above points = 0	1
Rating of Value If score is: 2 = H 1 = M × 0 = I Record the rating of	the first nage

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

### **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>Wetland EI Tht 1572</u> Date of site visit: <u>1/20/16</u>

Rated by <u>J Marki off</u> Trained by Ecology? <u>X</u> Yes \_\_\_ No Date of training <u>4/15</u> **HGM Class used for rating** <u>DepRewichal</u> Wetland has multiple HGM classes? \_\_\_ Y <u>X</u> N

**NOTE**: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map \_\_\_\_\_\_

OVERALL WETLAND CATEGORY (based on functions \( \frac{1}{2} \) 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				Habitat					
					Circle	the ap	propi	riate r	atings	
Site Potential	Н	M	L	Н	M	L	Н	M	0	
Landscape Potential	Н	M	(1)	Н	М	0	Н	M	0	
Value	H	M	L	Н	M	L	Н	М	0	TOTAL
Score Based on Ratings		6			5			3		14

### Score for each function based on three ratings (order of ratings is not *important)* 9 = H,H,H8 = H,H,M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L5 = M,M,L4 = M,L,L3 = L, L, L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	

2/9/14

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	3
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > $\frac{1}{2}$ total area of wetland  Area seasonally ponded is > $\frac{1}{2}$ total area of wetland  Area seasonally ponded is < $\frac{1}{2}$ total area of wetland  points = 2  points = 0	4
Total for D 1 Add the points in the boxes above	10
Rating of Site Potential If score is:12-16 = H $_{\sim}$ 0-5 = L Record the rating on the first page 3.0. Does the landscape have the potential to support the water quality function of the site?	ge
D 2.1. Does the wetland unit receive stormwater discharges?  Yes = 1 No = 0	0
5 E. Z. Boes the Westana anne receive storm atter about 900.	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0  D 2.3. Are there sentic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D Elony We that e septite systems within 250 ft en are treatment	
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?  Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	0
Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M 2 0 = L Record the rating on the fire	st 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 = $1 \text{ No} = 0$	- (
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 = $2 \text{ No} = 0$	2
Total for D 3 Add the points in the boxes above	3

Rating of Value If score is:  $\sqrt{2-4} = H$   $\sqrt{1} = M$   $\sqrt{0} = L$ 

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation	on
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	4
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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)	3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class	3
Total for D 4 Add the points in the boxes above	10
Rating of Site Potential If score is: 12-16 = H 46-11 = M 0-5 = L Record the rating on the	first page
) 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. ls $>10\%$ 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	
Rating of Landscape Potential If score is:3 = H1 or 2 = M X0 = 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.  The existing or potential outflow from the wetland is so constrained by human or natural conditions that the	1
water stored by the wetland cannot reach areas that flood. Explain why points = 0  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
Y = Y = Y = Y = Y = Y = Y = Y = Y = Y =	

Rating of Value If score is:  $2-4 = H \times 1 = M = 0 = I$ 

#### These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that site functions to provide important habitat 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. 4 structures or more: points = 4 Aquatic bed 3 structures: points = 2 \_\_\_\_Emergent Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 1 structure: points = 0 X Forested (areas where trees have > 30% cover) 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). 4 or more types present: points = 3 Permanently flooded or inundated 3 types present: points = 2 X Seasonally flooded or inundated Occasionally flooded or inundated 2 types present: points = 1 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 2 points Freshwater tidal wetland .1 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 2If you counted: > 19 species points = 1 5 - 19 species points = 0< 5 species 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. Moderate = 2 points Low = 1 point None = 0 points All three diagrams in this row are HIGH = 3points

H 1.5. Special habitat features:					
Check the habitat features that are present in the wetland. The number of checks is the number of points.					
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).					
Standing snags (dbh > 4 in) within the wetland					
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)	(				
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree					
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered					
where wood is exposed)					
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are					
permanently or seasonally inundated (structures for egg-laying by amphibians)					
X Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of					
strata)  Add the points in the boxes above					
Total for H 1 Add the points in the boxes above					
Rating of Site Potential If score is:15-18 = H7-14 = M	the first page				
H 2.0. Does the landscape have the potential to support the habitat functions of the site?					
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).					
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%					
If total accessible habitat is:					
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	1 1				
20-33% of 1 km Polygon points = 2	1 '				
25 5575 51 2 3331 5 3765					
25 25 75 27 27 27 27 27 27 27 27 27 27 27 27 27					
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.					
Calculate: % undisturbed habitat+ [(% moderate and low intensity land uses)/2] =%	1				
Undisturbed habitat > 50% of Polygon points = 3					
Undisturbed habitat 10-50% and in 1-3 patches points = 2	<b>'</b>				
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)	-2				
≤ 50% of 1 km 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:4-6 = H1-3 = MX<1 = L	he 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					
— It has 3 or more priority habitats within 100 m (see next page)	1				
It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	0				
— It is mapped as a location for an individual WDFW priority species					
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources					
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) within 100 m	6				
Site does not meet any of the criteria above points = 0	. 1				
ation of Value If soons is: 2 - H 1 - M V 0 - I	the first nage				

ating of Value If score is: \_\_\_2 = H \_\_\_\_1 = M \_\_\_\_0 = L

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

RATING SUMMARY – Western W	ashington
Name of wetland (or ID #): Wetland EJ/BK/EV/EM Date	e of site visit: 1/20/16
Rated by A. Makkiott Trained by Ecology? X Yes _	_No Date of training 4//
HGM Class used for rating Depressional Wetland has multiple H	IGM classes?Y X_N
NOTE: Form is not complete without the figures requested (figure Source of base aerial photo/map	res can be combined).
OVERALL WETLAND CATEGORY (based on functions \( \sum_{\text{ord}} \)	r special characteristics)
1. Category of wetland based on FUNCTIONS	
Category I — Total score = 23 - 27	Score for each
Category II - Total score = 20 - 22	function based
Category III – Total score = 16 - 19	on three ratings
Category IV – Total score = 9 - 15	(order of ratings is not
FUNCTION Improving Hydrologic Habitat	important)

FUNCTION	Improving Water Quality		Hydrologic		Habitat				
		Circle the appropriate ratings							
Site Potential	н 🕥	L	Н	W	L	Н	М	0	
Landscape Potential	Н 🕅	L	Н	M	L	Н	M	0	
Value	(H) M	L	Н	M	L	Н	M	0	TOTAL
Score Based on Ratings	1			6			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	I II	
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	I II	
Interdunal	I II III IV	
None of the above		

DEPRESSIONAL AND FLATS WETLANDS  Water Quality Functions - Indicators that the site functions to improve water quality	in the second
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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  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  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	1
Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area points = 3  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area points = 1  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is < ½ total area of wetland  points = 2  points = 0	2
Total for D 1 Add the points in the boxes above	6
Total for D 1  Rating of Site Potential If score is: 12-16 = H	age
the state of the s	age .
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the first p	age O
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the first p2.0. Does the landscape have the potential to support the water quality function of the site?	
Rating of Site Potential If score is:12-16 = H	
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the first policy and the site?  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  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
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L	0 1 0
Rating of Site Potential If score is:12-16 = H	0 1 0 0
Rating of Site Potential If score is:12-16 = H	0 1 0 0
Rating of Site Potential If score is:12-16 = H	0 1 0 0
Rating of Site Potential If score is:12-16 = H	O O O I I irrst page
Rating of Site Potential If score is:12-16 = H	O O O I I irrst page

Rating of Value If score is:  $\times 2-4 = H$  \_\_\_1 = M \_\_\_0 = L

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation  4.0. Does the site have the potential to reduce flooding and erosion?  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) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet  Points = 7 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet  Points = 5 Points = 3
O 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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet  points = 7  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet  points = 5
Wetland is a depression or flat depression with no surface water leaving it (no outlet)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet  points = 7  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet  points = 5
0 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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
The wetland is a "headwater" wetland  Wetland is flat but has small depressions on the surface that trap water  Marks of ponding less than 0.5 ft (6 in)  points = 0
2 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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5
Total for D 4 Add the points in the boxes above
Rating of Site Potential If score is: 12-16 = H 26-11 = M 0-5 = L Record the rating on the first page
) 5.0. Does the landscape have the potential to support hydrologic functions of the site?
D 5.1. Does the wetland receive stormwater discharges?  Yes = 1 No = 0
0 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0
> 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
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
O 6.0. Are the hydrologic functions provided by the site valuable to society?
Consider the first 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.  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
There are no problems with flooding downstream of the wetland.  points = 0
O 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

.tating of Value If score is: \_\_\_\_2-4 = H \_\_\_\_\_0 = L

#### 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. 4 structures or more: points = 4 Aquatic bed 3 structures: points = 2 Emergent 2 structures: points = 1 Scrub-shrub (areas where shrubs have > 30% cover) 1 structure: points = 0 Forested (areas where trees have > 30% cover) 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). 4 or more types present: points = 3 Permanently flooded or inundated 3 types present: points = 2 X Seasonally flooded or inundated Occasionally flooded or inundated 2 types present: points $\approx 1$ 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland \_Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 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 ft<sup>2</sup>. 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 points $\approx 2$ If you counted: > 19 species points = 15 - 19 species points = 0 < 5 species 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. Low = 1 point Moderate = 2 points None = 0 points All three diagrams in this row are **HIGH** = 3points

# Wetland name or number EJ/EK/EL/EM

H 1.5. Special habitat features:  Check the habitat features that are present in the wetland. The number of checks is the number of points.  Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).  Standing snags (dbh > 4 in) within the wetland  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)  Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)  At least % ac of thin-stemmed persistent plants or woody branches are present in areas that are	1
permanently or seasonally inundated (structures for egg-laying by amphibians)  Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for H 1 Add the points in the boxes above	2
Rating of Site Potential If score is:15-18 = H7-14 = M \( \frac{1}{2} \) 0-6 = L Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i> ).  **Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$> \frac{1}{3}$ (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: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
Undisturbed habitat > 50% of Polygon points = 3	1 1
Undisturbed habitat 10-50% and in 1-3 patches points = 2	<b>'</b>
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)	1-2
≤ 50% of 1 km 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:4-6 = H1-3 = M \times < 1 = L Record the rating on t	he 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	
— It has 3 or more priority habitats within 100 m (see next page)	
It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	
— It is mapped as a location for an individual WDFW priority species	
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources  **The Property of the Prop	
<ul> <li>It has been categorized as an important habitat site in a local or regional comprehensive plan, in a</li> <li>Shoreline Master Plan, or in a watershed plan</li> </ul>	
Site has 1 or 2 priority habitats (listed on next page) within 100 m	
Site does not meet any of the criteria above points = 0	

Rating of Value If score is: 2 = H 1 = M 20 = L

Wetland name or number EJ/EK/EL/EM

# **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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or					
Rated by D. T.	eesdale	Tr	rained by E	cology?XYes	□ No Date of training 4
HGM Class used for	rating Slop	e		Wetland has	multiple HGM classes?
NOTE: Fo	rm is not complet Source of base ae			equested (figure	es can be combined).
OVERALL WETLA	ND CATEGORY	I	(based on	functions or	special characteristics   )
1. Category of v	vetland based or				
		I - Total score			Score for each
	Category	II - Total score	e = 20 - 22		function based
	Category	III - Total scor	re = 16 - 19	)	on three
	Category	IV - Total scor	re = 9 - 15		ratings (order of ratings
FUNCTION	Improving Water Quality	Hydrologic	Habitat		is not important)
	List apj	propriate rating	(H, M, L)		
Site Potential	V	V	V		9 = H, H, H
andscape Potential	-	L	M		8 = H, H, M
√alue	Ĥ	M	V	Total	7 = H, H, L
Score Based on Ratings	5	4	4	(14)	7 = H, M, M 6 = H, M, L
•				13	6 = M, M, M 5 = H, L, L 5 = M, M, 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	

4 = M, L, L 3 = L, L, L

SLOPE WETLANDS  Water Quality Functions - Indicators that the site functions to improve water quality	and a second
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	
Slope is > 1% - 2% points = 2	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	3
Dense, uncut, herbaceous plants > ½ of area points = 3	
Dense, woody, plants > ½ of area points = 2	
Dense, uncut, herbaceous plants > 1/4 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	pro-
Rating of Site Potential If score is: 12 = H 6 - 11 = M 0 - 5 = L Record the rating on the state of the rating on the state of the stat	the first same
Adding of Site Potential it score is. 12 - H0-11 - M0-3 - L Aecold the fating of the	ille illsi paye
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	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?	0
Other Sources Yes = 1 No = 0	
Total for S 2 Add the points in the boxes above	0
Rating of Landscape Potential If score is: $\Box 1 - 2 = M$ $\bigcirc 0 = L$ Record the rating on the score is: $\Box 1 - 2 = M$	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	2
Total for S 3 Add the points in the boxes above	3
Rating of Value If score is  2 - 4 = H  1 = M  0 = L  Record the rating on a	the first page
Note 5.20 - other sources of pollutants are downhill of wetler	and

SLOPE WETLANDS		25 27 2	35	
Hydrologic Functions - Indicators that the site functions to reduce flo	oding and stream ero	sion		
S 4.0. Does the site have the potential to reduce flooding and stream erosion?		0.0.1		
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, <b>rigid</b> plants cover > 90% of the area of the wetland All other conditions	points = 1 points = 0			
Rating of Site Potential If score is: \( \sum 1 = M \) \( \sum 0 = L \)	Record the rating on t	he first p	age	
S 5.0. Does the landscape have the potential to support hydrologic functions of	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	0		
Rating of Landscape Potential If score is: 1 = M 70 = L	Record the rating on t	he first p	agı	
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	1		
Surface flooding problems are in a sub-basin farther down-gradient No flooding problems anywhere downstream	points = 1 points = 0			
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	Ø	ī	
Rating of Value If score is: □2 - 4 = H     1 = M   □0 = L	Record the rating on t	he first p	ag	

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.					
☐ Aquatic bed 4 structures or more: points = 4 ☐ Emergent 3 structures: points = 2 ☐ Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points - 1 ☐ 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	0				
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).					
□ Permanently flooded or inundated 4 or more types present: points = 3 □ Seasonally flooded or inundated 3 types present: points = 2 □ Occasionally flooded or inundated 2 types present: points = 1 □ Saturated only 1 types present: points = 0 □ Permanently flowing stream or river in, or adjacent to, the wetland □ Seasonally flowing stream in, or adjacent to, the wetland	0				
<ul><li>□ Lake Fringe wetland</li><li>□ Freshwater tidal wetland</li><li>2 points</li><li>2 points</li></ul>					
H 1.3. Richness of plant species					
Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> .  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	}				
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  All three diagrams in this row are	1				
HIGH = 3 points					

H 1.5. Special habitat features:					
Check the habitat features that are present in the wetland. The number of checks is the	number				
of points.					
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)					
☐ Standing snags (dbh > 4 in) within the wetland					
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants					
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)		1			
☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning					
(> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees					
that have not yet weathered where wood is exposed)  ☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present	t in areas				
that are permanently or seasonally inundated (structures for egg-laying by amp					
Invasive plants cover less than 25% of the wetland area in every stratum of plants					
H 1.1 for list of strata)					
Total for H 1 Add the points in the box	es above	43			
		the first page			
		, 3			
H 2.0. Does the landscape have the potential to support the habitat function of the site?					
H 2.1 Accessible habitat (include only habitat that directly abuts wetland unit).					
Calculate:					
% undisturbed habitat + (% moderate & low intensity land uses / 2)	=				
If total accessible habitat is:					
$> \frac{1}{3}$ (33.3%) of 1 km Polygon	points = 3	4			
20 - 33% of 1 km Polygon	points = 2				
10 - 19% of 1 km Polygon	points = 1				
	points = 0				
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.					
Calculate:					
% undisturbed habitat + (% moderate & low intensity land uses / 2)	=				
Undisturbed habitat > 50% of Polygon	points = 3	- (			
	points = 2	ſ			
· ·	points = 2				
	points = 0				
H 2.3 Land use intensity in 1 km Polygon: If	JOINTO U				
, , , , , ,	ints = (-2)	0			
	points = 0	V			
Total for H 2 Add the points in the box		43			
Rating of Landscape Potential If Score is: 4 - 6 = H X1 - 3 = M <- 1 = L Record th					
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? C	Choose				
only the highest score that applies to the wetland being rated.					
	points = 2				
☐ It has 3 or more priority habitats within 100 m (see next page)					
☐ It provides habitat for Threatened or Endangered species (any plant					
or animal on the state or federal lists) ☐ It is mapped as a location for an individual WDFW priority species		0			
☐ It is a Wetland of High Conservation Value as determined by the					
Department of Natural Resources					
☐ It has been categorized as an important habitat site in a local or	1/				
regional comprehensive plan, in a Shoreline Master Plan, or in a					
watershed plan		511			
· ·	ooints = 1				
	ooints = 0				
·					

#### **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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.

Ш	Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
	<b>Biodiversity Areas and Corridors</b> : Areas of habitat that are relatively important to various species of native fish and wildlife ( <i>full descriptions in WDFW PHS report</i> ).
	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.
	<b>Oregon White Oak</b> : Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important ( <i>full descriptions in WDFW PHS report p. 158 – see web link above</i> ).
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
	<b>Westside Prairies</b> : Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie ( <i>full descriptions in WDFW PHS report p. 161 – see web link above</i> ).
	<b>Instream</b> : The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
	<b>Nearshore</b> : 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).
	<b>Caves</b> : 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.
	<b>Talus</b> : 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.
	<b>Snags and Logs</b> : 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

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): Wetland FB TAL 1572 Date of site visit: 1/15/16

Rated by D. TEESDALE Trained by Ecology Yes \_\_\_\_ No Date of training 4/15

HGM Class used for rating Depleared Wetland has multiple HGM classes?\_\_\_ Y \_\_\_ N

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map \_\_\_\_\_\_

**OVERALL WETLAND CATEGORY** (based on functions  $\searrow$  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				
Circle the appropriate ratings										
Site Potential	Н	W	L	Н	М	(1)	Н	М	U	
Landscape Potential	Н	(M)	L	Н	(M)	L	Н	М	(1)	
Value	H	M	L	Н	M	L	Н	M	L	TOTAL
Score Based on Ratings		7			5			4		16

Score for each function based on three ratings (order of ratings is not *important)* 9 = H,H,H8 = H,H,M7 = H,H,L7 = H, M, M6 = H,M,L6 = M,M,M5 = H,L,L5 = M,M,L4 = M,L,L3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
ວ 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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	l
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ¼ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 2  points = 0	4
Total for D 1 Add the points in the boxes above	6
Rating of Site Potential If score is: 12-16 = H 46-11 = M 0-5 = L Record the rating on the first pa	ge
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?	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?  Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the fin	st 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 = $1 \text{ No} = 0$	T
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	Z
Total for D 3 Add the points in the boxes above	3
Rating of Value If score is: X 2-4 = H1 = M0 = L Record the rating on the first page	

DEPRESSIONAL AND FLATS WETLANDS  Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degrada	tion
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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)	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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	3
Rating of Site Potential If score is:12-16 = H6-11 = M $\times$ 0-5 = L Record the rating on the	e first page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 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	i
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	e 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):  Flooding occurs in a sub-basin that is immediately down-gradient of unit.  Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.  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  There are no problems with flooding downstream of the wetland.	1
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	
Rating of Value If score is:2-4 = H1 = M0 = L	e 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 % ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bed 4 structures or more: points = 4 3 structures: points = 2 Emergent Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 X 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). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points = 1 1 type present: points = 0 X Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points 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 ft<sup>2</sup>. 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 points = 1 5 - 19 species points = 0 < 5 species 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 pointModerate = 2 points All three diagrams in this row are **HIGH** = 3points

H 1.5. Special habitat features:					
Check the habitat features that are present in the wetland. The number of checks is the number of points.					
$\angle X$ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).					
Standing snags (dbh > 4 in) within the wetland					
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)	2				
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree					
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered					
where wood is exposed)					
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)					
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of					
strata)					
Total for H 1 Add the points in the boxes above	6				
Rating of Site Potential If score is:15-18 = H7-14 = M \( \frac{1}{2} \) 0-6 = L Record the rating on	the first page				
H 2.0. Does the landscape have the potential to support the habitat functions of the site?					
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).					
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%					
If total accessible habitat is:					
$> \frac{1}{3}$ (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: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%					
Undisturbed habitat > 50% of Polygon points = 3	1 1				
Undisturbed habitat 10-50% and in 1-3 patches points = 2	1				
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)	-2				
≤ 50% of 1 km 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: 4-6 = H 1-3 = M 2<1 = L Record the rating on t	he 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					
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	1				
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)					
— It is mapped as a location for an individual WDFW priority species					
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources					
— 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) within 100 m points = 1					
Site does not meet any of the criteria above points = 0  Rating of Value If score is: 2 = H X 1 = M 0 = I  Record the rating on	the first nage				

### **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

	and (or ID#): wettand			
Rated by D	Teesdale	Trained by Ecolo	gy? <u></u> YesNo Dat	te of training $4/15$
HGM Class us	ed for rating Dep Ressury	wetland h	as multiple HGM clas	ses? <u>     Y                               </u>
	Form is not complete withource of base aerial photo/ma		uested (figures can b	e combined).
OVERALL WE	TLAND CATEGORY	(based on fur	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				Habitat				
					Circle t	he ap	propr	iate ratings	
Site Potential	Н	M	L	Н	(M)	L	Н	M (L)	
Landscape Potential	Н	M	(1)	Н	$\bigcirc$	L	Н	JU	
Value	(1)	М	L	Н	M	L	Н	м ()	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,H8 = H,H,M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L5 = M,M,L4 = M, L, L3 = L,L,L

# 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY			
Estuarine	I II			
Wetland of High Conservation Value	I			
Bog	I			
Mature Forest	I			
Old Growth Forest	I			
Coastal Lagoon	I II			
Interdunal	I II III I			
None of the above				

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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.  points = 1	3
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	0
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is < ½ total area of wetland  points = 2  Area seasonally ponded is < ½ total area of wetland  points = 0	4
Total for D 1 Add the points in the boxes above	7
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the first part D 2.0. Does the landscape have the potential to support the water quality function of the site?	ige
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?  Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	0
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the fire	rst 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	
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	2
Total for D 3 Add the points in the boxes above	3
Rating of Value If score is: $\sqrt{2-4} = H$ $1 = M$ $0 = I$ Record the rating on the first page	

DEPRESSIONAL AND FLATS WETLANDS	ALLE E	
Hydrologic Functions - Indicators that the site functions to reduce flooding	ng and stream degradati	on
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permaner  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently	ng ditch points = 1	Ч
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)	of the outlet. For wetlands  points = 7  points = 5  points = 3  points = 3  points = 1  points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area contributing surface water to the wetland to the area of the wetland unit itself.  The area of the basin is less than 10 times the area of the unit  The area of the basin is 10 to 100 times the area of the unit  The area of the basin is more than 100 times the area of the unit  Entire wetland is in the Flats class	points = 5 points = 3 points = 0 points = 5	3
Total for D 4 Add the poi	nts in the boxes above	10)
Rating of Site Potential   If score is:12-16 = H6-11 = M0-5 = L	Record the rating on the	first page
D 5.0. Does the landscape have the potential to support hydrologic functions of the s	ite?	
D 5.1. Does the wetland 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 runo	off? Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive huma >1 residence/ac, urban, commercial, agriculture, etc.)?	an land uses (residential at Yes = 1 No = 0	1
Total for D 5 Add the poi	nts in the boxes above	1
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?		
<ul> <li>D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best the wetland unit being roted. Do not add points. Choose the highest score if more than The wetland captures surface water that would otherwise flow down-gradient into are damaged human or natural resources (e.g., houses or salmon redds):</li> <li>Flooding occurs in a sub-basin that is immediately down-gradient of unit.</li> <li>Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin.</li> <li>The existing or potential outflow from the wetland is so constrained by human or natural water stored by the wetland cannot reach areas that flood. Explain why</li> </ul>	points = 2 points = 1 points = 1 points = 1 ral conditions that the points = 0	1
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 reg	gional flood control plan? Yes = 2 No = 0	0
Total for D 6 Add the poi	ints in the boxes above	
Rating of Value If score is:2-4 = H 1 = M 0 = L	Record the rating on the	first page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

### 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. 4 structures or more: points = 4 \_\_\_\_Aquatic bed 3 structures: points = 2 Emergent Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 1 structure: points = 0 Forested (areas where trees have > 30% cover) 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). 4 or more types present: points = 3 Permanently flooded or inundated 3 types present: points = 2 \_Seasonally flooded or inundated 2 types present: points = 1 Occasionally flooded or inundated 1 type present: points = 0 ★ Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 2 points Freshwater tidal wetland H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 2If you counted: > 19 species points = 1 5 - 19 species points = 0 < 5 species 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. Moderate = 2 points None = 0 points Low = 1 point All three diagrams in this row are HIGH = 3points

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	1
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	1
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
\(\times\) 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:15-18 = H7-14 = M0-6 = L	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	1
20-33% of 1 km Polygon points = 2	-6
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: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = %  Undisturbed habitat > 50% of Polygon points = 3	1
1	1
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)	-2
≤ 50% of 1 km Polygon is high intensity points = 0	<u> </u>
Total for H 2 Add the points in the boxes above	Ø
Rating of Landscape Potential If score is:4-6 = H1-3 = M	he 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	
It has 3 or more priority habitats within 100 m (see next page)	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	רק
It is mapped as a location for an individual WDFW priority species	
It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
— 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) within 100 m	
Site does not meet any of the criteria above points = 0	

Rating of Value If score is: 2 = H 1 = M 20 = L

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>Wetland FE TAL·1572</u> Date of site visit: <u>1/15/16</u>
Rated by <u>J. Marriott</u> Trained by Ecology? <u>X</u> Yes <u>No Date of training 4/15</u> **HGM Class used for rating <u>PepMessimpl</u>** Wetland has multiple HGM classes? <u>Y</u> X N **NOTE: Form is not complete without the figures requested** (figures can be combined).

OVERALL WETLAND CATEGORY (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		H	Hydrologic			Habit			
					Circle	the ap	prop	riate ro	itings	
Site Potential	Н	M	L	(H)	M	L	Н	M	(4)	
Landscape Potential	Н	M	1	H	М	(1)	Н	N	Ĺ	
Value	(1)	M	L	Н	M	L	Н	O	L	TOTAL
Score Based on Ratings			7		6			5		18

## Score for each function based on three ratings (order of ratings is not *important)* 9 = H, H, H8 = H,H,M7 = H,H,L7 = H, M, M6 = H,M,L6 = M,M,M5 = H,L,L5 = M, M, L4 = M,L,L3 = L,L,L

# 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CAT	EGORY	
Estuarine	I II		
Wetland of High Conservation Value	I		
Bog	I		
Mature Forest	Ī		
Old Growth Forest		I	
Coastal Lagoon	I	II	
Interdunal	I II	III IV	
None of the above			

2/9/16

### 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 = 3Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 10 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 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 = 53 Wetland has persistent, ungrazed, plants > 1/2 of area points = 3Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area points = 1Wetland has persistent, ungrazed plants $< \frac{1}{10}$ of area points = 0D 1.4. Characteristics of seasonal ponding or inundation: This is the area that is ponded for at least 2 months. See description in manual. Area seasonally ponded is > 1/2 total area of wetland points = 4Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0Total for D 1 Add the points in the boxes above Rating of Site Potential If score is: $12-16 = H \times 6-11 = M$ 0-5 = LRecord 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 = 00 D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Volleyball court uphill Total for D 2 Add the points in the boxes above Rating of Landscape Potential If score is:\_ $3 \text{ or } 4 = H \times 1 \text{ or } 2 = M$ 0 = LRecord 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 0 303(d) list? Yes = 1 No = 0D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? $Yes = 1 \quad No = 0$ D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES 2 if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0Total for D 3 Add the points in the boxes above

1 = M

0 = L

Rating of Value If score is: X 2-4 = H

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	1
D 4.1. Characteristics of surface water outflows from the wetland:	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	4
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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)	3
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.  The area of the basin is less than 10 times the area of the unit  The area of the basin is 10 to 100 times the area of the unit  The area of the basin is more than 100 times the area of the unit  Entire wetland is in the Flats class  D 4.3. Contribution of the area of upstream basin contribution of the area of the wetland unit itself.  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 = 5  Entire wetland is in the Flats class	5
Total for D 4 Add the points in the boxes above	12
Rating of Site Potential If score is 12-16 = H6-11 = M0-5 = L Record the rating on the firs	st page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	<u> </u>
	2
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	)
Rating of Landscape Potential If score is: $3 = H$ $1$ or $2 = M$ $X_0 = L$ Record the rating on the first	st 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2  • Surface flooding problems are in a sub-basin farther down-gradient. points = 1  Flooding from groundwater is an issue in the sub-basin. points = 1  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  There are no problems with flooding downstream of the wetland. points = 0	1
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
	1

Rating of Value If score is: \_\_\_\_2-4 = H \_\_\_\_1 = M \_\_\_\_0 = L

### 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 % ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. 4 structures or more: points = 4 Aquatic bed Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 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). Permanently flooded or inundated 4 or more types present: points = 3 X Seasonally flooded or inundated 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points = 1 Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 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 ft<sup>2</sup>. 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 points = 2 If you counted: > 19 species points = 15 - 19 species points = 0 < 5 species 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. Moderate = 2 points None = 0 points Low = 1 point All three diagrams in this row are HIGH = 3points

H 1.5. Special habitat features:  Check the habitat features that are present in the wetland. The number of checks is the	number of noints	
<ul> <li>Large, downed, woody debris within the wetland (&gt; 4 in diameter and 6 ft long).</li> </ul>	number of points.	
Standing snags (dbh > 4 in) within the wetland		
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants exte	nds 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)		
Stable steep banks of fine material that might be used by beaver or muskrat for der		142
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have		
where wood is exposed)		
At least $rac{1}{4}$ ac of thin-stemmed persistent plants or woody branches are present in a	reas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)		
Invasive plants cover less than 25% of the wetland area in every stratum of plants (	see H 1.1 for list of	
strata)		2
	nts in the boxes above	
Rating of Site Potential If score is:15-18 = H7-14 = M \( \times_0-6 = L \)	Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the si	ite?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		
Calculate: % undisturbed habitat + [(% moderate and low intensity land use	es)/2]=%	
If total accessible habitat is:		
$> \frac{1}{3}$ (33.3%) of 1 km Polygon	points = 3	2
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: % undisturbed habitat + [(% moderate and low intensity land use	es)/2]= =%	
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)	-2
≤ 50% of 1 km Polygon is high intensity	points = 0	,
	nts in the boxes above	
Rating of Landscape Potential If score is:4-6 = H \times_1-3 = M<1 = L	Record the rating on t	he 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	
— It has 3 or more priority habitats within 100 m (see next page)		
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the</li> </ul>	ne state or federal lists)	
It is mapped as a location for an individual WDFW priority species		'
It is a Wetland of High Conservation Value as determined by the Department of Nat		1
It has been categorized as an important habitat site in a local or regional comprehens.  The section Management of the section of the se	nsive plan, in a	
Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1	lla
	·	
Site does not meet any of the criteria above  Rating of Value If score is: 2 = H 1 = M 0 = L	points = 0  Record the rating on	the first nage
Rating of Value If score is:2 = H1 = M0 = L	necord the ruting on	the just page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

# **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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): Wetland F	F TAL 1572 Date of site visit: 1/15/16
Rated by J. Markjott	Trained by Ecology? $\chi$ YesNo Date of training $4//5$
HGM Class used for rating <u>Pepplession</u>	Wetland has multiple HGM classes?Y 🖈 N
	ut the figures requested (figures can be combined).
Source of base aerial photo/map	0
	1/
OVERALL WETLAND CATEGORY	$\bigvee$ (based on functions $\chi$ or special characteristics)

## 1. Category of wetland based on FUNCTIONS

	_Category I — Total score = 23 - 27
	_Category II — Total score = 20 - 22
t_	_Category III - Total score = 16 - 19
X	_Category IV - Total score = 9 - 15

FUNCTION Improving Hydrologic Water Quality		gic	Habitat							
					Circle t	he ap	propr	iate r	atings	
Site Potential	Н	M	L	Н	(N)	L	Н	M	0	
Landscape Potential	Н	M	0	Н	M	L	Н	*	(1)	
Value	1	M	L	Н	M	L	Н	М	(1)	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 5 = 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	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
$\cup$ 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
<ul> <li>Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).</li></ul>	ت
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 Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area points = 0	0
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is < ½ total area of wetland  points = 2  points = 0	4
Total for D 1 Add the points in the boxes above	ダ
Rating of Site Potential   If score is: 12-16 = H	ge
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?  Source	0
Total for D 2 Add the points in the boxes above	0
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = MX_0 = L Record the rating on the fire	st 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	
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	2
Total for D 3 Add the points in the boxes above	3
Rating of Value   If score is: \( \times 2-4 = H \)1 = M0 = 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	on
$\sim$ 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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	4
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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	3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	3
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 part of the rating of th	first page
5.0. Does the landscape have the potential to support hydrologic functions of the site?	
υ 5.1. Does the wetland 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	
Total for D 5 Add the points in the boxes above	ì
Rating of Landscape Potential If score is:3 = H1 or 2 = M0 = L	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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2  • Surface flooding problems are in a sub-basin farther down-gradient. points = 1  Flooding from groundwater is an issue in the sub-basin. points = 1  The existing or potential outflow from the wetland is so constrained by human or natural conditions that the	l
water stored by the wetland cannot reach areas that flood. Explain why points = 0	
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	1
ating of Value If score is:2-4 = H1 = M0 = L Record the rating on the	first page

Wetland Rating System for Western WA: 2014 Update

Rating Form - Effective January 1, 2015

### These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that site functions to provide important habitat 11.0. 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. \_Aquatic bed 4 structures or more: points = 4 \_\_\_\_Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 Y 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). Permanently flooded or inundated 4 or more types present: points = 3 🔀 Seasonally flooded or inundated 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points = 1 X Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points Freshwater tidal wetland 2 points 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 = 25 - 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 Moderate = 2 points Low = 1 point All three diagrams in this row are **HIGH** = 3points

vectoria name of namber	
H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
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)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of	
strata)	
Total for H 1 Add the points in the boxes above	5
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$> \frac{1}{3} (33.3\%) \text{ of } 1 \text{ km Polygon}$ points = 3	
	1
, , ,	/
, *	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	1
Undisturbed habitat > 50% of Polygon points = 3	1
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	2
> 50% of 1 km Polygon is high intensity land use points = (-2)	- 1
≤ 50% of 1 km Polygon is high intensity points = 0	-
Total for H 2 Add the points in the boxes above	P
Rating of Landscape Potential If score is:4-6 = H1-3 = M1 = L Record the rating on the	ne 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</i>	
that applies to the wetland being rated.	
Site meets ANY of the following criteria: points = 2	
It has 3 or more priority habitats within 100 m (see next page)	- 0
It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	
It is mapped as a location for an individual WDFW priority species	
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
— 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) within 100 m	
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

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

# **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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): wetland GB TAL 1572 Date of site visit: 1/20/16
Rated by Marki off Trained by Ecology? X Yes No Date of training
HGM Class used for rating pepplessimal Wetland has multiple HGM classes? Y X N
NOTE: Form is not complete without the figures requested (figures can be combined).  Source of base aerial photo/map
OVERALL WETLAND CATEGORY  (based on functions V 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			Habit				
					Circle t	he a	propr	iate r	atings	
Site Potential	Н	M	L	Н	M	L	Н	М	9	
Landscape Potential	Н	W	L	Н	M	L	Н	M	9	
Value	H	М	L	Н	M	L	Н	М	0	TOTAL
Score Based on Ratings		7			6			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	1 11
Wetland of High Conservation Value	I
Bog	I
Mature Forest	Ī
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	

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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	1
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	0
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ¼ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 2  points = 0	4
Total for D 1 Add the points in the boxes above	8
Rating of Site Potential If score is: 12-16 = H 46-11 = M 0-5 = L Record the rating on the first pa	ge
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. ls > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 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? Source Yes = $1 \text{ No} = 0$	0
Total for D 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 or 4 = HX1 or 2 = M0 = L Record the rating on the fire	st 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 = $2 \text{ No} = 0$	2
Total for D 3 Add the points in the boxes above	3
Rating of Value If score is: 2-4 = H1 = M0 = L Record the rating on the first page	

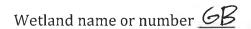
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation  J 4.0. Does the site have the potential to reduce flooding and erosion?  D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet hat is permanently flowing 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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet  Metland is a "headwater" wetland  Wetland is flat but has small depressions on the surface that trap water  Metland is a "headwater" wetland to the area of the unit area of the basin is less than 0.5 ft (6 in)  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 unit  The area of the basin is 10 to 100 times the area of the unit  D ints = 5  The area of the basin is nore than 100 times the area of the unit  D ints = 0  Add the points in the boxes above  Rating of Site Potential If score is: 12-16 = H	
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) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet Marks of ponding less than 0.5 ft (6 in)  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. The area of the basin is less than 10 times the area of the unit The area of the basin is nore than 100 times the area of the unit For area of the basin is more than 100 times the area of the unit For area of the basin is more than 100 times the area of the unit For area of the basin is more than 100 times the area of the unit For area of the basin is more than 100 times the area of the unit For area of the basin is not to 100 times the area of the unit For area of the basin is not to 100 times the area of the unit For area of the basin is not than 100 times the area of the unit For area of the basin is not than 100 times the area of the unit For area of the basin is not than 100 times the area of the unit For area of the bas	
Wetland is a depression or flat depression with no surface water leaving it (no outlet)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing boints = 1  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing boints = 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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  The wetland is a "headwater" wetland points = 1  Marks of ponding less than 0.5 ft (6 in)  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.  The area of the basin is less than 10 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class  Total for D 4  Add the points in the boxes above	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 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)  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.  The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is more than 100 times the area of the unit points = 0  Total for D 4  Add the points in the boxes above	
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class  Total for D 4  Add the points in the boxes above	
contributing surface water to the wetland to the area of the wetland unit itself.  The area of the basin is less than 10 times the area of the unit  The area of the basin is 10 to 100 times the area of the unit  The area of the basin is more than 100 times the area of the unit  Entire wetland is in the Flats class  Total for D 4  Add the points in the boxes above	
The area of the basin is less than 10 times the area of the unit  The area of the basin is 10 to 100 times the area of the unit  The area of the basin is more than 100 times the area of the unit  Entire wetland is in the Flats class  Total for D 4  Add the points in the boxes above	
Total for 5 4	
Rating of Site Potential If score is: 12-16 = H	
	age
⊃ 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
υ 5.1. Does the wetland receive stormwater discharges?  Yes = 1 No = 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	- 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	
Total for D 5 Add the points in the boxes above (	
Rating of Landscape Potential If score is:3 = H	age
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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit.  • Surface flooding problems are in a sub-basin farther down-gradient.  Flooding from groundwater is an issue in the sub-basin.  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	
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	

tating of Value If score is:  $_2-4 = H \times 1 = M = 0 = L$ 

These questions apply to wetlands of all HGM classes.  HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	
. I 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. Aquatic bedAquatic bedEmergentScrub-shrub (areas where shrubs have > 30% cover)Forested (areas where trees have > 30% cover)I structures: points = 1Forested class where trees have > 30% cover)I structure: points = 0If 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)	0
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).  Permanently flooded or inundated 4 or more types present: points = 3  Seasonally flooded or inundated 3 types present: points = 2  Coccasionally flooded or inundated 2 types present: points = 1  Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland  Lake Fringe wetland Freshwater tidal wetland 2 points	0
A 1.3. Richness of plant species  Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> .  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  5 - 19 species  points = 1  < 5 species  points = 0	1
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  All three diagrams in this row are HIGH = 3points	0

H 1.5. Special habitat features:							
Check the habitat features that are present in the wetland. The number of checks is the number of points.							
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).							
Standing snags (dbh > 4 in) within the wetland							
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)							
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	1						
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered							
where wood is exposed)							
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are							
permanently or seasonally inundated (structures for egg-laying by amphibians)							
X Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of							
strata)	. 0						
Total for H 1 Add the points in the boxes above	1						
Rating of Site Potential If score is:15-18 = H7-14 = M \times_0-6 = L Record the rating on	the first page						
H 2.0. Does the landscape have the potential to support the habitat functions of the site?							
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).							
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%							
If total accessible habitat is:							
$> \frac{1}{3} (33.3\%) \text{ of } 1 \text{ km Polygon}$ points = 3							
20-33% of 1 km Polygon points = 2	(						
20 33 / 01 2 km / 51/g6 /	,						
10 13/001 1 1111/1 01/801/							
(10% of 1 km ) - (10% o							
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.  **Calculate:** % undisturbed habitat +[(% moderate and low intensity land uses)/2] = %	0						
Contracte:	(						
Challet and the control of the challet	1						
Official field flat field of 1 km is 1/8 - 1							
H 2.3. Land use intensity in 1 km Polygon: If	-2						
> 50% of 1 km Polygon is high intensity land use points = (-2)							
≤ 50% of 1 km Polygon is high intensity points = 0	1						
Total for H 2 Add the points in the boxes above	$\phi$						
Rating of Landscape Potential If score is:4-6 = H1-3 = MX<1 = L Record the rating on t	he 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							
It has 3 or more priority habitats within 100 m (see next page)							
It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)							
It is mapped as a location for an individual WDFW priority species							
It is a Wetland of High Conservation Value as determined by the Department of Natural Resources							
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) within 100 m							
Site does not meet any of the criteria above points = 0							

Rating of Value If score is: \_\_2 = H \_\_\_1 = M \_\_\_1 = L



# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #): <u>ドB/ドC/ド</u> 人	Date of site visit: 1/15/16
Rated by KN	Date of site visit: 1/16/16 _ Trained by Ecology? X Yes No Date of training 3/16
HGM Class used for rating Slope	Wetland has multiple HGM classes?Y $\chi$ _N
	ut the figures requested (figures can be combined).
OVERALL WETLAND CATEGORY	(based on functions $X$ or special characteristics)
1. Category of wetland based on Fl	

 _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		H	ydrolo	gic	1	Habit	at		
					Circle	the ap	propr	iate ri	atings	
Site Potential	Н	M	(1)	Н	М	(1)	Н	М	(1)	
Landscape Potential	Н	M	L	Н	М	(1)	Н	M	(1)	
Value	(1)	M	L	Н	M	L	Н	M	(1)	TOTAL
Score Based on Ratings		6			4			3		13

### Score for each function based on three ratings (order of ratings is not important) 9 = H, H, H8 = H, H, M7 = H,H,L7 = H,M,M6 = H,M,L 6 = M,M,M5 = H,L,L5 = M,M,L4 = M,L,L3 = L,L,L

# 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY				
Estuarine	1 11				
Wetland of High Conservation Value	I				
Bog	I				
Mature Forest	I				
Old Growth Forest	I				
Coastal Lagoon	II II				
Interdunal	I II III IV				
None of the above	X				

# **HGM Classification of Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated.

r		question do not apply to the entire unit being rated, you discrete land classes. In this case, identify which hydrologic criteria in 8.
1.	Are the water levels in the entire unit	usually controlled by tides except during floods?
	(O)- go to 2	YES - the wetland class is Tidal Fringe - go to 1.1
1	1.1 Is the salinity of the water during po	eriods of annual low flow below 0.5 ppt (parts per thousand)?
		Freshwater Tidal Fringe use the forms for <b>Riverine</b> wetlands. If it warine wetland and is not scored. This method cannot be used to
2.	The entire wetland unit is flat and pro and surface water runoff are NOT sou	ecipitation is the only source (>90%) of water to it. Groundwater trees of water to the unit.
	go to 3  If your wetland can be classified as a F	YES – The wetland class is Flats Flats Wetland, use the form for <b>Depressional</b> wetlands.
3.		is on the shores of a body of permanent open water (without any f the year) at least 20 ac (8 ha) in size;
	NO- go to 4 YES -	The wetland class is Lake Fringe (Lacustrine Fringe)
4.		an be very gradual), and in one direction (unidirectional) and usually comes from sheetflow, or in a swale without distinct banks,
	NO – go to 5	<b>YES</b> - The wetland class is <b>Slope</b>
	<b>NOTE</b> : Surface water does not pond is shallow depressions or behind humn deep).	in these type of wetlands except occasionally in very small and nocks (depressions are usually <3 ft diameter and less than 1 ft
5.		channel, where it gets inundated by overbank flooding from that

Wetland name or number kB/kc/kN

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	HGM class to		
being rated	use in rating		
Slope + Riverine	Riverine		
Slope + Depressional	Depressional		
Slope + Lake Fringe	Lake Fringe		
Depressional + Riverine along stream	Depressional		
within boundary of depression			
Depressional + Lake Fringe	Depressional		
Riverine + Lake Fringe	Riverine		
Salt Water Tidal Fringe and any other	Treat as		
class of freshwater wetland	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.

Wedand name of humber PD/PD/PD/	
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	
Slope is > 1%-2% points = 2	3
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	
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	0
Does not meet any of the criteria above for plants points = 0	
Total for S 1 Add the points in the boxes above	3
Rating of Site Potential If score is: 12 = H 6-11 = M 0-5 = L Record the rating on to	he 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	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?	1
Other sources $DDGS$ Yes = 1 No = 0	
Total for S 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is: X 1-2 = M0 = L Record the rating on t	he 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
§ 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	(
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES</i> if there is a TMDL for the basin in which unit is found.  Yes = 2 No = 0	2
Total for S 3 Add the points in the boxes above	3
Rating of Value If score is: \( \sum_2 - 4 = H \)1 = M0 = L Record the rating on t	the first page

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream eros	ion
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 > \frac{1}{8} in), or dense enough, to remain erect during surface flows.  Dense, uncut, rigid plants cover > 90% of the area of the wetland  All other conditions  points = 0	0
Rating of Site Potential If score is:1 = MX_0 = L	the first page
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?  Yes = 1 No = 0	0
Rating of Landscape Potential If score is: 1 = M \(\times 0 = L\)  Record the rating on the score is: 1 = M \(\times 0 = L\)	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)  Surface flooding problems are in a sub-basin farther down-gradient  No flooding problems anywhere downstream  points = 0	1
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	1

NOTES and FIELD OBSERVATIONS:

Rating of Value If score is:  $_{2-4} = H \times 1 = M = 0 = L$ 

### 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. Aquatic bed 4 structures or more: points = 4 X Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 1 structure: points = 0 Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: 0 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). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points = 1 X Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 0 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 ft<sup>2</sup>. 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 points = 0 < 5 species 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 All three diagrams Ò in this row are **HIGH** = 3points

Wetland name or number KB/KC/KN

Westerna name of names of property of the state of the st	T	
H 1.5. Special habitat features:	15 h 6 1-4-	
Check the habitat features that are present in the wetland. <i>The number of checks is</i>		
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)		
Standing snags (dbh > 4 in) within the wetland		
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10)		
Stable steep banks of fine material that might be used by beaver or muskrat for	denning (> 30 degree	
slope) OR signs of recent beaver activity are present (cut shrubs or trees that he where wood is exposed)		
At least ¼ ac of thin-stemmed persistent plants or woody branches are present	in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians		1
X Invasive plants cover less than 25% of the wetland area in every stratum of plan		,
strata)		
Total for H 1 Add the	points in the boxes above	1
Rating of Site Potential If score is:15-18 = H7-14 = M	Record the rating on t	he first page
H 2.0. Does the landscape have the potential to support the habitat functions of th	ne site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		
Calculate: % undisturbed habitat + [(% moderate and low intensity land	d uses)/21 = %	
If total accessible habitat is:	" —	
> <sup>1</sup> / <sub>3</sub> (33.3%) of 1 km Polygon	points = 3	
20-33% of 1 km Polygon	points = 2	1
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.	points	
Calculate: % undisturbed habitat + [(% moderate and low intensity land	d uses)/2] = %	
Undisturbed habitat > 50% of Polygon	points = 3	
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	
·	points = 1	
Undisturbed habitat 10-50% and > 3 patches	points = 0	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If	points = (- 2)	_
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity		43
Total for H 2 Add the  Rating of Landscape Potential If score is: 4-6 = H 1-3 = M 2<1=L	points in the boxes above  Record the rating on the	e 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? Cha	oose only the highest score	
that applies to the wetland being rated.	points = 2	
Site meets ANY of the following criteria:	points = 2	V.
— It has 3 or more priority habitats within 100 m (see next page)	the state or foderal lists)	
— It provides habitat for Threatened or Endangered species (any plant or animal of	on the State or rederal lists)	
It is mapped as a location for an individual WDFW priority species      Western def Uint Consequentian Value as determined by the Department of	f Natural Posauross	
It is a Wetland of High Conservation Value as determined by the Department of  The beautiful as a serious state of the serious state of the serious state of the beautiful as a serious state of the serious sta		
It has been categorized as an important habitat site in a local or regional compr  Shareling Master Plan, as in a watershed plan.	renensive plan, in a	0
Shoreline Master Plan, or in a watershed plan	naints - 1	
Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1	
Site has 1 or 2 priority habitats (listed on next page) within 100 m Site does not meet any of the criteria above	points = 0	

# **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.

# Wetland name or number $\frac{\text{KD}/\text{KE}/\text{KF}/\text{KG}/\text{KH}/\text{KI}/\text{KJ}/\text{KK}/\text{KL}}{\text{KM}/\text{KO}}$

RATING SUMMARY – Western Washington

Name of wetland (or ID #): <u>ドブ/ド</u> /		
Rated by $\c k N$	Trained by Ecology? <u>X</u> Yes	No Date of training 3/16
HGM Class used for rating Slope	Wetland has multiple	e HGM classes?Y <u>X</u> N
NOTE: Form is not complete Source of base aerial pho	e without the figures requested (figures)	gures can be combined).
OVERALL WETLAND CATEGO	<b>RY</b> $\bot$ (based on functions $X$	or special characteristics)
1. Category of wetland based	on FUNCTIONS	
Category I – Tota	al score = 23 - 27	Score for each
Category II – Tot	al score = 20 - 22	function based
Category III – To	tal score = 16 - 19	on three ratings
V Catagomy IV To	tal saara = 0 1E	(order of ratings

FUNCTION	Improving Water Quality		H	ydrol	ogic		Habit	at	R.	
					Circle	the ap	propr	iate r	atings	
Site Potential	Н	М	(L)	Н	M	6	Н	M	0	
Landscape Potential	Н	W	L	Н	M	(1)	Н	М	0	
Value	(H)	M	L	Н	<b>M</b>	L	Н	M	(1)	TOTAL
Score Based on Ratings		6			4			3		13

Score for each function based on three ratings (order of ratings is not important)

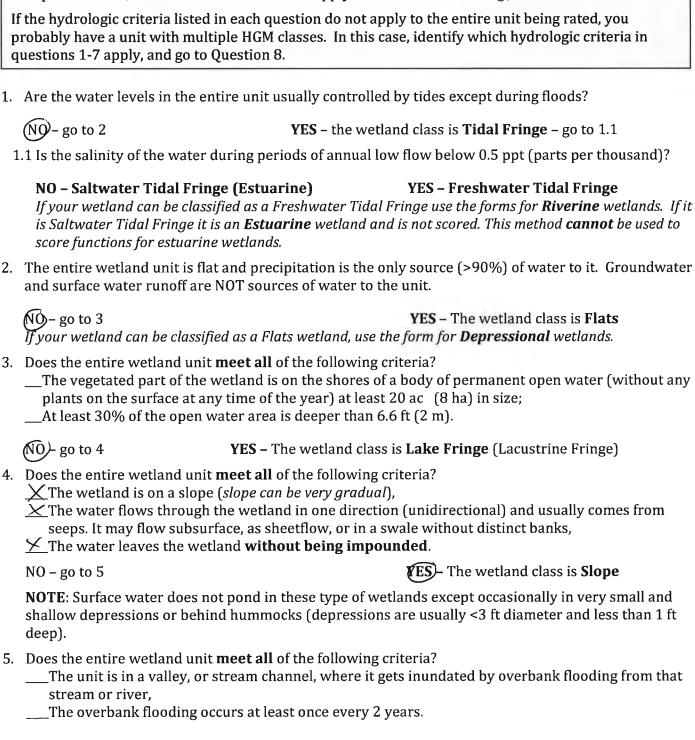
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

# 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	×

# **HGM Classification of Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated.



# Wetland name or number Kb/KE/KF/KF/K6/KH/KI/KJ/KK/KL/KM/KO

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	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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.

# Wetland name or number <u>KD</u>/KE | KF | KG | KH | KI | KJ | KK | KL | KM | KO

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  Slope is > 1%-2% points = 2  Slope is > 2%-5% points = 1	į	
Slope is 72%-5%  Slope is greater than 5%  points = 0	3	
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  Dense, uncut, herbaceous plants > ½ of area  Dense, woody, plants > ½ of area  Dense, uncut, herbaceous plants > ¼ of area  Does not meet any of the criteria above for plants  points = 0  points = 6  points = 3  points = 2  points = 1  points = 0	0	
Total for S 1 Add the points in the boxes above	3	
Rating of Site Potential If score is: 12 = H 6-11 = M 70-5 = 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	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1?  Other sources $\mathcal{D} \mathcal{D} \mathcal{G}$ Yes = 1 No = 0	
Total for \$ 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? <i>Answer YES</i> if there is a TMDL for the basin in which unit is found.  Yes = 2 No = 0	2
Total for S 3 Add the points in the boxes above	3

Rating of Value If score is: <u>2-4 = H</u> <u>1 = M</u> \_\_0 = L

# Wetland name or number KD/KE/KF/KG/KH/KI/KJ/KK/KL/KM/KO

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream eros	ion
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, <b>rigid</b> 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 \( \frac{1}{2} = \textbf{0} = \textbf{L} \)  Record the rating on the state of the state	the first page
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?  Yes = 1 No = 0	0
Rating of Landscape Potential If score is: 1 = M \( \sqrt{0} = L \)  Record the rating on t	he 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:	1
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)  Surface flooding problems are in a sub-basin farther down-gradient  No flooding problems anywhere downstream  points = 0	1
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	1
Rating of Value If score is:2-4 = HX1 = M0 = L Record the rating on the state of the	the first page

NOTES and FIELD OBSERVATIONS:

## Wetland name or number <u>KD</u>/KE/KF/KG/KH/KI/KJ/KK/KL/KM/KO

### 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. 4 structures or more: points = 4 Aquatic bed Emergent 3 structures: points = 2 2 structures: points = 1 Scrub-shrub (areas where shrubs have > 30% cover) 1 structure: points = 0 Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: 0 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). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points = 1 Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points 2 points Freshwater tidal wetland Ò H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 2 If you counted: > 19 species points = 1 5 - 19 species Ō points = 0 < 5 species 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 All three diagrams in this row 0 are HIGH = 3points

# Wetland name or number <u>KD/KE/KF/KG/KH/KI/KJ/KK/KL/KM/KO</u>

H 1.5. Special habitat features:		
Check the habitat features that are present in the wetland. The number	of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter ar		
Standing snags (dbh > 4 in) within the wetland	.= :	
Undercut banks are present for at least 6.6 ft (2 m) and/or overhang	ging plants extends at least 3.3 ft (1 m)	
over a stream (or ditch) in, or contiguous with the wetland, for at le		
Stable steep banks of fine material that might be used by beaver or		
slope) OR signs of recent beaver activity are present (cut shrubs or the shrubs)		
where wood is exposed)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
At least ¼ ac of thin-stemmed persistent plants or woody branches	are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by	· ·	
Invasive plants cover less than 25% of the wetland area in every stra		ſ
strata)	, , ,	
Total for H 1	Add the points in the boxes above	1
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L	Record the rating on t	he first page
H 2.0. Does the landscape have the potential to support the habitat fund	ctions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		
Calculate: % undisturbed habitat + [(% moderate and low in		
If total accessible habitat is:	10011310y 10110 0303// 2]	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon	points = 3	
	points = 2	
20-33% of 1 km Polygon		1
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: % undisturbed habitat + [(% moderate and low in		
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)	- 7
≤ 50% of 1 km 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:4-6 = H1-3 = M &< 1 = L	Record the rating on th	e 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 p	olicies? Choose only the highest score	
that applies to the wetland being rated.	, ,	
Site meets ANY of the following criteria:	points = 2	
<ul> <li>It has 3 or more priority habitats within 100 m (see next page)</li> </ul>	·	
It provides habitat for Threatened or Endangered species (any plant)	or animal on the state or federal lists)	
It is mapped as a location for an individual WDFW priority species	2. 2	
It is a Wetland of High Conservation Value as determined by the Dep	partment of Natural Resources	
It has been categorized as an important habitat site in a local or region.		
Shoreline Master Plan, or in a watershed plan	onal comprehensive plan, in a	0
Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1	
	noints = 0	
Site does not meet any of the criteria above	points = 0	the first name

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

### **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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

	IWARY - Western Washington
Name of wetland (or ID # KA/KI	D/KF/KT/KU/KV/KW Date of site visit: 4/8/10
Rated by KN	
HGM Class used for rating <u>S/c</u>	Wetland has multiple HGM classes?Y X_N
NOTE: Form is not comple Source of base aerial ph	te without the figures requested (figures can be combined), noto/map
OVERALL WETLAND CATEGO	ORY (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		npro ter Q	ving uality	H	ydrolo	ogic		Habit	at	
					Circle	the ap	propi	riate re	atings	
Site Potential	Н	M	(1)	Н	М	0	Н	М	0	
Landscape Potential	Н	O	L	Н	М	(1)	Н	M	0	
Value	(1)	М	L	Н	0	L.	Н	M	(L)	TOTAL
Score Based on Ratings		6			4			3		13

# 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	I II	
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	1	
Old Growth Forest	I	
Coastal Lagoon	I II	
Interdunal	I II III IV	
None of the above	×	

### **HGM Classification of Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated. If the 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)? YES - Freshwater Tidal Fringe NO - Saltwater Tidal Fringe (Estuarine) 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. YES - The wetland class is Flats NO - go to 3 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? XThe wetland is on a slope (slope can be very gradual), X 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. YES- The wetland class is Slope NO - go to 5 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 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.

# Wetland name or number\_KA/KD/KF/KT/KU/KV/KW

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	Treat as
class of freshwater wetland	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.

# Wetland name or number KAIKD/KF/KT/KU/KU/kW

SLOPE WETLAND		
Water Quality Functions - Indicators that the site for	unctions to improve water quality	
5 1.0. Does the site have the potential to improve water quality?		
5 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)	points = 3	
Slope is 1% or less	points = 2	
Slope is > 1%-2% Slope is > 2%-5%	points = 1	3
Slope is greater than 5%	points = 0	)
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
1.3. Characteristics of the plants in the wetland that trap sediments and pol		
Choose the points appropriate for the description that best fits the plan have trouble seeing the soil surface (>75% cover), and uncut means not than 6 in.	nts in the wetland. Dense means you	
Dense, uncut, herbaceous plants > 90% of the wetland area	points = 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	0
Does not meet any of the criteria above for plants	points = 0	
Total for S 1	Add the points in the boxes above	3
Rating of Site Potential If score is:12 = H6-11 = M0-5 = L	Record the rating on th	he first pa <b>g</b>
S 2.0. Does the landscape have the potential to support the water qua	lity function of the site?	
5.2.1. Is $> 10%$ of the area within $150$ ft on the uphill side of the wetland in la	nd uses that generate pollutants?  Yes = 1 No = 0	D
S 2.2. Are there other sources of pollutants coming into the wetland that are	not listed in question S 2.1?	1
Other sources 2095	Yes = 1 No = 0	
Fotal for S 2	Add the points in the boxes above	1
Rating of Landscape Potential If score is:1-2 = M0 = L	Record the rating on t	he first pag
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, rive 303(d) list?	r, lake, or marine water that is on the Yes = 1 No = 0	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? on the 303(d) list.	At least one aquatic resource in the basin is Yes = 1  No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important f if there is a TMDL for the basin in which unit is found.	or maintaining water quality? <i>Answer YES</i> Yes = 2 No = 0	2
Total for S 3	Add the points in the boxes above	3
Rating of Value If score is:	Record the rating on t	the first pa

# Wetland name or number \_\_ KA/KD/KF/KT/kU/KV/KW

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 > \frac{1}{a} in), or dense enough, to remain erect during surface flows.  Dense, uncut, rigid plants cover > 90% of the area of the wetland  All other conditions  points = 0	0					
Rating of Site Potential If score is:1 = MX0 = L	he first page					
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?						
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?  Yes = 1 No = 0	0					
Rating of Landscape Potential If score is:1 = M0 = L Record the rating on t	he 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)  Surface flooding problems are in a sub-basin farther down-gradient  No flooding problems anywhere downstream  points = 0	1					
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 \$ 6 Add the points in the boxes above	1					
Paties of Value if score is: $2.4 + H \times 1 + M = 0 + I$ 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 % ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. 4 structures or more: points = 4 Aquatic bed 3 structures: points = 2 **X** Emergent Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 1 structure: points = 0 \_Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: 0 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 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). Permanently flooded or inundated 4 or more types present: points = 3 3 types present: points = 2 Seasonally flooded or inundated 2 types present: points = 1 Occasionally flooded or inundated 1 type present: points = 0 X Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points 2 points Ò Freshwater tidal wetland H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 2 If you counted: > 19 species points = 1 5 - 19 species Ô points = 0 < 5 species 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. Moderate = 2 points None = 0 points Low = 1 point All three diagrams in this row 0 are HIGH = 3points

# Wetland name or number KA/KD/KF/KT/KU/KV/KW

1 1.5. Special habitat features:		
Check the habitat features that are present in the wetland. The number of checks is the	number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).		
Standing snags (dbh > 4 in) within the wetland		
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extended	ends 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	1)	
Stable steep banks of fine material that might be used by beaver or muskrat for de	nning (> 30 degree	
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have	not yet weathered	
where wood is exposed)		
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in	areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)		r
Invasive plants cover less than 25% of the wetland area in every stratum of plants	(see H 1.1 for list of	1:
strata)		
Total for H 1 Add the po	ints in the boxes above	1
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L	Record the rating on t	he first pag
H 2.0. Does the landscape have the potential to support the habitat functions of the	site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).		
Calculate: % undisturbed habitat + [(% moderate and low intensity land use	ses)/2] =%	
If total accessible habitat is:		
> 1/3 (33.3%) of 1 km Polygon	points = 3	
20-33% of 1 km Polygon	points = 2	1
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: % undisturbed habitat + [(% moderate and low intensity land u	ses)/2] =%	
Undisturbed habitat > 50% of Polygon	points = 3	
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	1
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)	2
≤ 50% of 1 km Polygon is high intensity	points = 0	-2
	oints in the boxes above	0
Rating of Landscape Potential If score is:4-6 = H1-3 = M V < 1 = L	Record the rating on t	he first pag
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? Choo.	se only the highest score	
that applies to the wetland being rated.	points = 2	
Site meets ANY of the following criteria:	points – z	
— It has 3 or more priority habitats within 100 m (see next page)	the state or foderal lists)	
It provides habitat for Threatened or Endangered species (any plant or animal on	tite State of Tederal (1505)	
It is mapped as a location for an individual WDFW priority species  The species of the spec	latural Resources	
— It is a Wetland of High Conservation Value as determined by the Department of N	nencive nian in a	
		1 4
It has been categorized as an important habitat site in a local or regional compression.  Shows like Maches Plan, exclusive short plan.	, , , , , ,	0
Shoreline Master Plan, or in a watershed plan	points = 1	0
		0

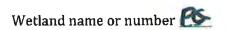
### **WDFW Priority Habitats**

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.



## **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):	TAL-15772	Date of site visit: 40 15
Rated by J. Marriott, D. Tees	مماد Trained by Ecology?	YesNo Date of training \( \frac{1}{15} \)
HGM Class used for rating Slope	Wetland has me	ultiple HGM classes?Y <u>×</u> N
NOTE: Form is not complete Source of base aerial pho	e without the figures requested to/map	ed (figures can be combined).
VERALL WETLAND CATEGO	RY III (hased on function	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	
		Circle the ap	propriate ratings	
Site Potential	H M	H Ø L	H M L	
Landscape Potential	H M L	H M 🕡	H M (	
Value	H M L	H M L	H M L	TOTAL
Score Based on Ratings	6	5	5	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	II II	
Wetland of High Conservation Value	I I	
Bog		
Mature Forest		
Old Growth Forest	I	
Coastal Lagoon	I II	
Interdunal	I II III IV	
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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
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 (con be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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

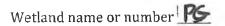
Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including 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 (can be added to figure above)	5 4.1	
Boundary of 150 ft buffer (can be added to another figure)	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)	5 3.3	

### **HGM Classification of Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated. If the 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? YES - the wetland class is Tidal Fringe - go to 1.1 NO go to 2 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES - Freshwater Tidal Fringe NO - Saltwater Tidal Fringe (Estuarine) 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. YES - The wetland class is Flats Hyour 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). YES - The wetland class is Lake Fringe (Lacustrine Fringe) NO | go to 4 Does the entire wetland unit meet all of the following criteria? X 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. YES - The wetland class is Slope NO - go to 5 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 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

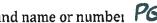
8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH 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.

SLOPE WETLANDS  Water Quality Functions - Indicators that the site functions to improve water or	quality
S 1.0. Does the site have the potential to improve water quality?	
Slope is > 1%-2% poil Slope is > 2%-5% poil	nts = 3 nts = 2 nts = 1
Stope is Breater than 570	nts = 0 No = 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 S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants:	No = 0 4
Dense, uncut, herbaceous plants > ½ of area poi Dense, woody, plants > ½ of area poi Dense, uncut, herbaceous plants > ¼ of area poi	nts = 6 nts = 3 nts = 2 nts = 1 nts = 0
Total for \$1 Add the points in the boxes	above
Rating of Site Potential If score is:12 = H6-11 = M0-5 = L Record the	rating on the first
Rating of Site Potential If score is:12 = H6-11 = M0-5 = L Record the S 2.0. Does the landscape have the potential to support the water quality function of the site?	rating on the first
Rating of Site Potential If score is:12 = H6-11 = M0-5 = L Record the  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	rating on the first  ? No = 0
Rating of Site Potential If score is:12 = H6-11 = M0-5 = L	rating on the first  ? No = 0  No = 0
Rating of Site Potential If score is:12 = H6-11 = M0-5 = L	rating on the first  ? No = 0  No = 0
Rating of Site Potential If score is:12 = H6-11 = M	? No = 0 No = 0 s above rating on the first
Rating of Site Potential If score is:12 = H6-11 = M	rating on the first  No = 0  No = 0  sabove  rating on the first  the  No = 0
Rating of Site Potential If score is:12 = H6-11 = M	Proting on the first  No = 0  No = 0  Sabove  rating on the first  the  No = 0  The basin is  No = 0
Rating of Site Potential If score is:12 = H6-11 = M	rating on the first  Positive No = 0  Sabove  rating on the first  The No = 0  The basin is No = 0  Iswer YES

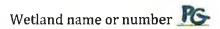


SLOPE WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream eros	ion	
S 4.0. Does the site have the potential to reduce flooding and stream erosion?		
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points 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  All other conditions  points = 0	1	
Rating of Site Potential If score is: \( \frac{1}{2} = M \)0 = \( \frac{1}{2} \) Record the rating on	the first page	
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?  Yes = 1 No = 0		
Rating of Landscape Potential If score is:1 = M	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)  Surface flooding problems are in a sub-basin farther down-gradient  No flooding problems anywhere downstream	1	
5 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	$\emptyset$	
Total for 5 6 Add the points in the boxes above		
	. 1	

Rating of Value If score is:  $2-4 = H \times 1 = M = 0 = L$ 

Record the rating on the first page

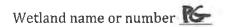
NOTES and FIELD OBSERVATIONS:



### 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. 4 structures or more: points = 4 Aquatic bed 3 structures: points = 2 Emergent 2 structures: points = 1 Scrub-shrub (areas where shrubs have > 30% cover) 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). 4 or more types present: points = 3 Permanently flooded or inundated 3 types present: points = 2 Seasonally flooded or inundated Occasionally flooded or inundated 2 types present: points = 1 1 type present: points = 0 Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland 2 points Lake Fringe wetland 2 points Freshwater tidal wetland H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft<sup>2</sup>. 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 points = 2 If you counted: > 19 species points = 1 5 - 19 species points = 0 < 5 species 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. Moderate = 2 points None = 0 points Low = 1 point All three diagrams in this row are HIGH = 3points



H 1.5. Special habitat features:  Check the habitat features that are present in the wetland. The number of checks is the number of points.  Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland  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)  Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	2
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)  X 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	8
Rating of Site Potential If score is:15-18 = H X7-14 = M0-6 = L Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	1
$>$ $^{1}/_{3}$ (33.3%) of 1 km Polygon points = 3	l l
20-33% of 1 km Polygon points = 2	
10-13/8 of 1 kin 1 olygon	1
10% of 1 kill 1 olygon	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%  Undisturbed habitat > 50% of Polygon  points = 3	1
Orlustatible Habitat 2 30% of 1 orkbon	[
Characterised habitat to 50% and in 1 5 parameters	
Official field the field of the	
Ondistance national 120% of 2 miles 178	
H 2.3. Land use intensity in 1 km Polygon: If  > 50% of 1 km Polygon is high intensity land use  points = (- 2)	7
> 50% of 1 km Polygon is high intensity and use  ≤ 50% of 1 km Polygon is high intensity  points = 0	
Total for H 2 Add the points in the boxes above	Ø
Rating of Landscape Potential If score is:4-6 = H1-3 = MX<1 = L	he 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	
- It has 3 or more priority habitats within 100 m (see next page)	
It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	
— It is mapped as a location for an individual WDFW priority species	
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	1
— 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) within 100 m points = 1	
Site has 1 of 2 priority habitats (instead of Make page), work	
Site does not meet any of the criteria above points = 0	the first name
Rating of Value If score is: 2 = H  \( \times 1 = M \)0 = L	i tne jirst page



### **WDFW Priority Habitats**

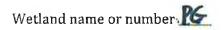
Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf 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.

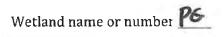
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 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  Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	Category
SC 1.0. Estuarine wetlands  Does the wetland meet the following criteria for Estuarine wetlands?  The dominant water regime is tidal,  Vegetated, and  With a salinity greater than 0.5 ppt  Yes -Go to SC 1.1  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?  Yes = Category I No - Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?  — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are Spartina, see page 25)  — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.	Cat. I
— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.  Yes = Category I  No = Category II	2017 11
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?  SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?  Yes = Category I  No = Not a WHCV  SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	Cat. I
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf  Yes - Contact WNHP/WDNR and go to SC 2.4 No = Not a 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?  Yes = Category I No = Not a WHCV	
SC 3.0. Bogs  Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.  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?  Yes – Go to SC 3.3  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?  Yes – Go to SC 3.3  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?  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?  Yes = Is a Category I bog  No = Is not a bog	Cat. I



SC 4.0.	Forested Wetlands	
(	Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate the wetland based on its functions.	
— 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.	
-	<ul> <li>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).</li> </ul>	
		Cat. I
	Yes = Category I No = Not a forested wetland for this section	
	Wetlands in Coastal Lagoons	
[	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
-	— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
	— 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 (needs to be measured near the bottom)	Cat. I
	Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	
SC 5.1. (	Does the wetland meet all of the following three conditions?	
	→ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	Cat. II
	than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
	— 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.	
	— The wetland is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )  Yes = Category   No = Category	
	Interdunal Wetlands	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions.	
	In practical terms that means the following geographic areas:	
	- Long Beach Peninsula: Lands west of SR 103	
	Grayland-Westport: Lands west of SR 105	Cat I
	— Ocean Shores-Copalis: Lands west of SR 115 and SR 109	
	Yes – Go to SC 6.1 No = not an interdunal wetland for rating	
CC C 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	Cat. II
	for the three aspects of function)?  Yes = Category I  No – Go to SC 6.2	
SC 6.2.	Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
	Yes = Category II No – Go to SC 6.3	Cat. II
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?	
	Yes = Category III No = Category IV	Cat. I

# **RATING SUMMARY – Western Washington**

	Name of wetland (or ID #): PK	TAL-1572	Date	e of site visit:
	Name of wetland (or ID #): PK Rated by J. Marric H, D. Ters	<u>ಕಿಷಲ</u> Trained by E	cology?X Yes _	No Date of training 4/15
	HGM Class used for rating Depre	ssional Wetla	nd has multiple I	HGM classes?Y X_N
	NOTE: Form is not complete Source of base aerial pho	_		
J۱	ERALL WETLAND CATEGO	RY III (based or	n functionso	r special characteristics)

### 1. Category of wetland based on FUNCTIONS

	_Category I — Total score = 23 - 27
	_Category II - Total score = 20 - 22
<u>_X</u>	_Category III - Total score = 16 - 19
	_Category IV — Total score = 9 - 15

FUNCTION	Improvi Water Qu	1.5	Hydrologic			Habitat		
	_		Circle the appropriate ratings				riate ratings	15
Site Potential	H (M)	L	Н	(M)	L	Н	M. D	
Landscape Potential	H (M)	L	Н	M	L	Н	MO	
Value	(H) M	L	Н	M	L	Н	M L	TOTAL
Score Based on Ratings	7			6			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	1 11	
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	I II	
Interdunal	I II III IV	
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 (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
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 (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	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 (can be added to another figure)	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 (can be added to figure above)	5 4.1	
Boundary of 150 ft buffer (can be added to another figure)	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)	\$ 3.1, \$ 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	5 3.3	

### **HGM Classification of Wetlands in Western Washington**

For questions 1-7, the criteria described must apply to the entire unit being rated. If the 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. Are the water levels in the entire unit usually controlled by tides except during floods?  $NO \rightarrow go to 2$ 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. 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.

### Wetland name or number PK

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.

maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural

NO - go to 7

ES - 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

NO - go to 8

outlet.

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	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	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.

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  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.  points = 2  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	0
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	$\varphi$
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  Wetland has persistent, ungrazed, plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants > $\frac{1}{10}$ of area  Wetland has persistent, ungrazed plants < $\frac{1}{10}$ of area  points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation:  This is the area that is ponded for at least 2 months. See description in manual.  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is > ½ total area of wetland  Area seasonally ponded is < ¼ total area of wetland  points = 2  points = 0	4
Total for D 1 Add the points in the boxes above	10
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the first potential to support the water quality function of the site?	ige
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	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	Ø
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?  Source Small road  Yes = 1 No = 0	1
Total for D 2 Add the points in the boxes above	2
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the file D 3.0. Is the water quality improvement provided by the site valuable to society?	rst page
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	Ø
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	2
Total for D 3 Add the points in the boxes above	3
Rating of Value   If score is: \( \sum_2-4 = H \)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	n
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)  Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2  Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch  Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing  points = 0	Ø
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  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5  Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3  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	<b>8</b> 3
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.  The area of the basin is less than 10 times the area of the unit points = 5  The area of the basin is 10 to 100 times the area of the unit points = 3  The area of the basin is more than 100 times the area of the unit points = 0  Entire wetland is in the Flats class points = 5	5
Total for D 4 Add the points in the boxes above	8
Rating of Site Potential If score is: 12-16 = H \( \times 6-11 = M \) 0-5 = L Record the rating on the fire	st page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland 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	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	Ø
Total for D 5 Add the points in the boxes above	1
Rating of Landscape Potential If score is: 3 = H 10 r 2 = M 0 = L  Record the rating on the fire	rst 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):  • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2  • Surface flooding problems are in a sub-basin farther down-gradient. points = 1  Flooding from groundwater is an issue in the sub-basin. points = 1  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  There are no problems with flooding downstream of the wetland. points = 0	1
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	$\phi$
Total for D 6 Add the points in the boxes above	1

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 % ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bedEmergent	1
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).  Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland Freshwater tidal wetland 2 points	P
H 1.3. Richness of plant species	
Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> .  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	E
<ul> <li>&lt; 5 species</li> <li>H 1.4. Interspersion of habitats         <ul> <li>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.</li> </ul> </li> <li>None = 0 points         <ul> <li>Low = 1 point</li> <li>Moderate = 2 points</li> </ul> </li> <li>All three diagrams in this row are HIGH = 3points</li> </ul>	$\phi$

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 In diameter and 6 ft long).	
. Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 r	n)
over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)	1
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	3.
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	
where wood is exposed)	1 1
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
X Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of	
Total for H 1 Add the points in the boxes above	e 3
Total IST II 2	
Rating of Site Potential if Scote is	Ton the just page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =9	%
If total accessible habitat is:	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points =	3   <i>Q</i>
20-33% of 1 km Polygon points =	2 7
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: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =	%
Undisturbed habitat > 50% of Polygon points =	3   1
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	2)   - 2
≤ 50% of 1 km Polygon is high intensity points =	0
Total for H 2 Add the points in the boxes above	re Ø
Rating of Landscape Potential If score is: 4-6 = H 1-3 = M <1 = L Record the rating	
Rating of Landscape Fotential in Section 2.	
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 sco.	re
that applies to the wetland being rated.	
Site meets ANY of the following criteria: points =	2
— It has 3 or more priority habitats within 100 m (see next page)	
<ul> <li>It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal list</li> </ul>	ts)
It is mapped as a location for an individual WDFW priority species	
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	
— 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) within 100 m  points =	.1
Site has 1 of 2 priority habitats (instead on hose page) which	
Site does not meet any of the criteria above points =	
Rating of Value If score is:2 = H1 = M0 = L Record the rating	ng on the first page

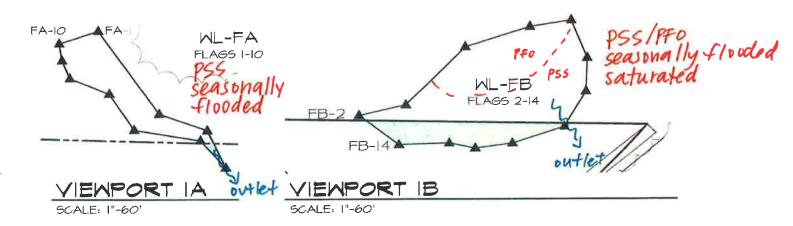
# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (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. <a href="http://wdfw.wa.gov/publications/00165/wdfw00165.pdf">http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</a> or access the list from here: <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>)

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.

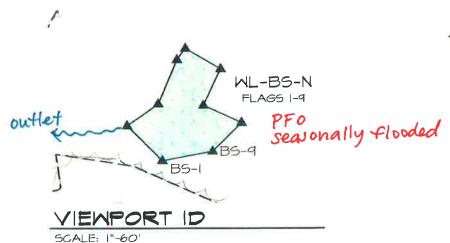
- Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds: Variable size patches of grass and forbs 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.





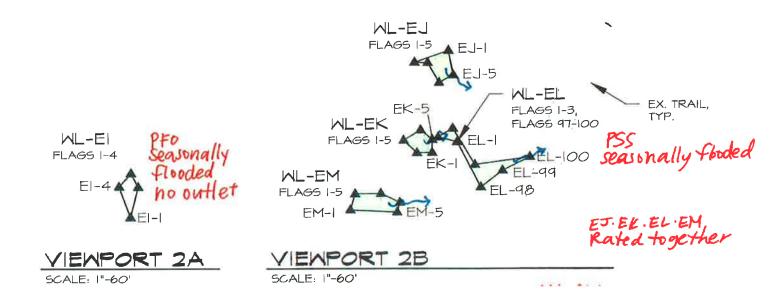


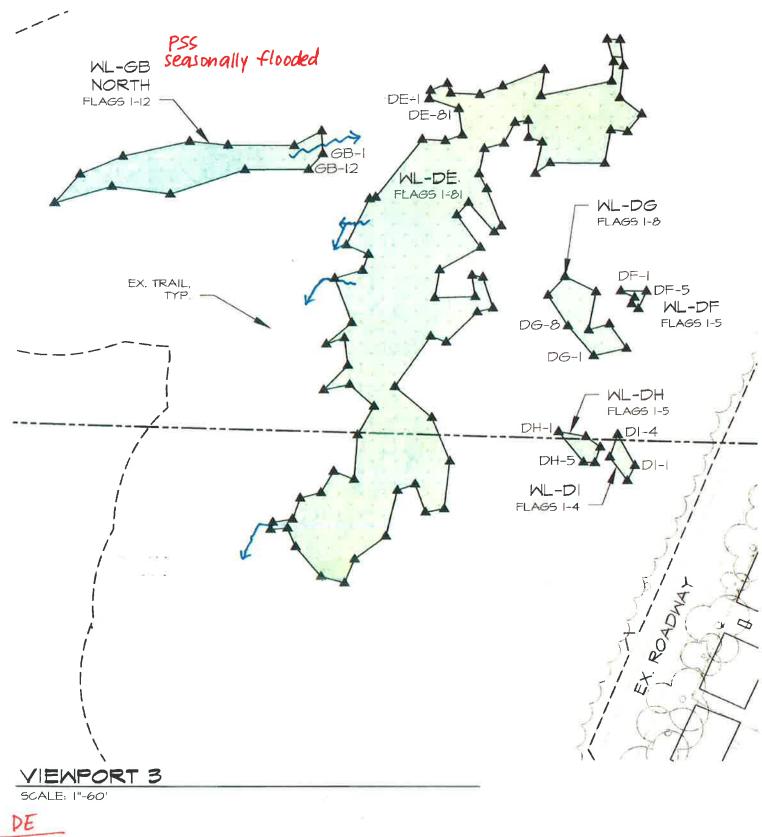


VIEWPORT IE

SCALE: 1"-60"

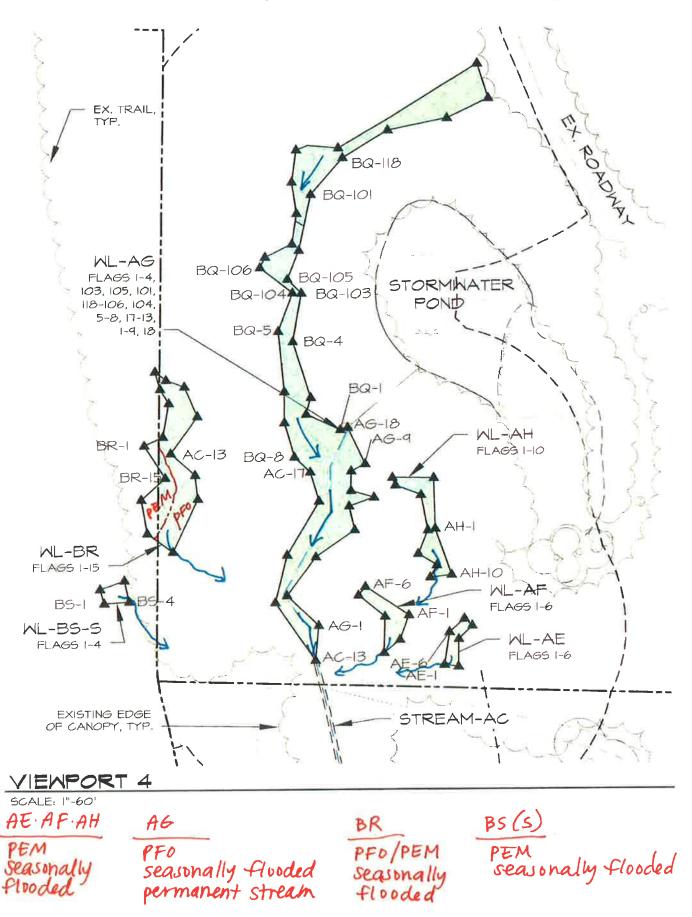
### SECTION 16, TOWNSHIP 21 NORTH, RANGE 4 E, W.M.

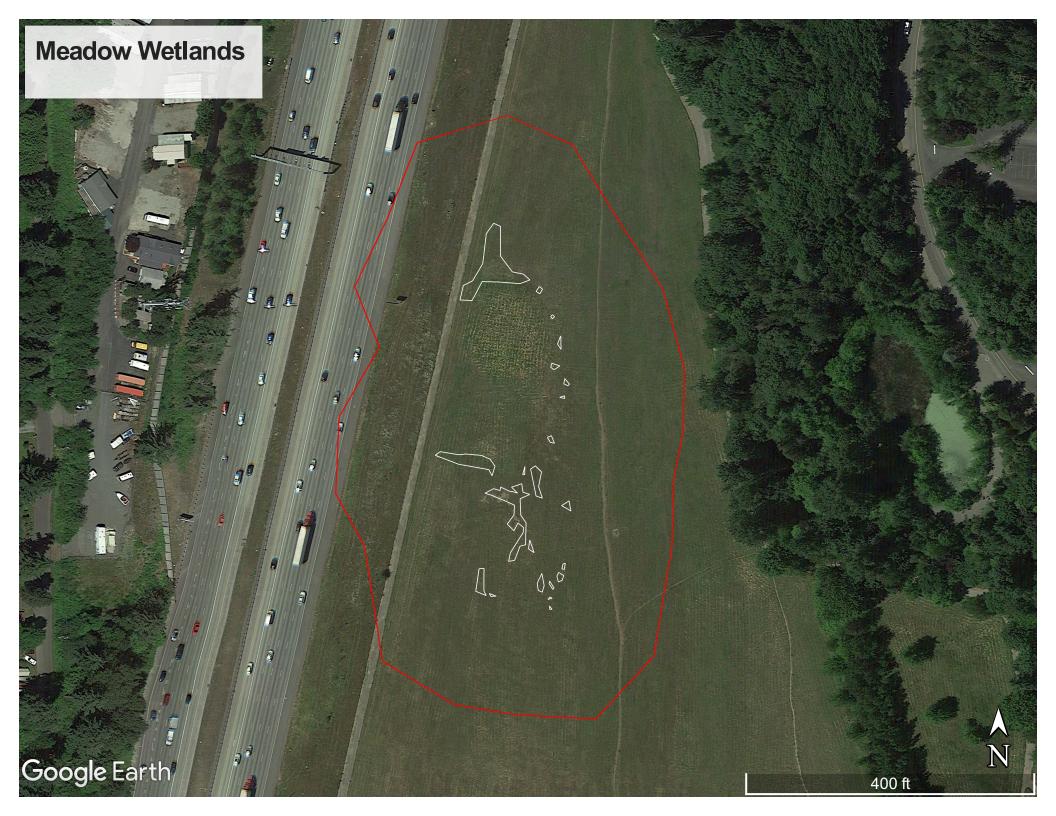




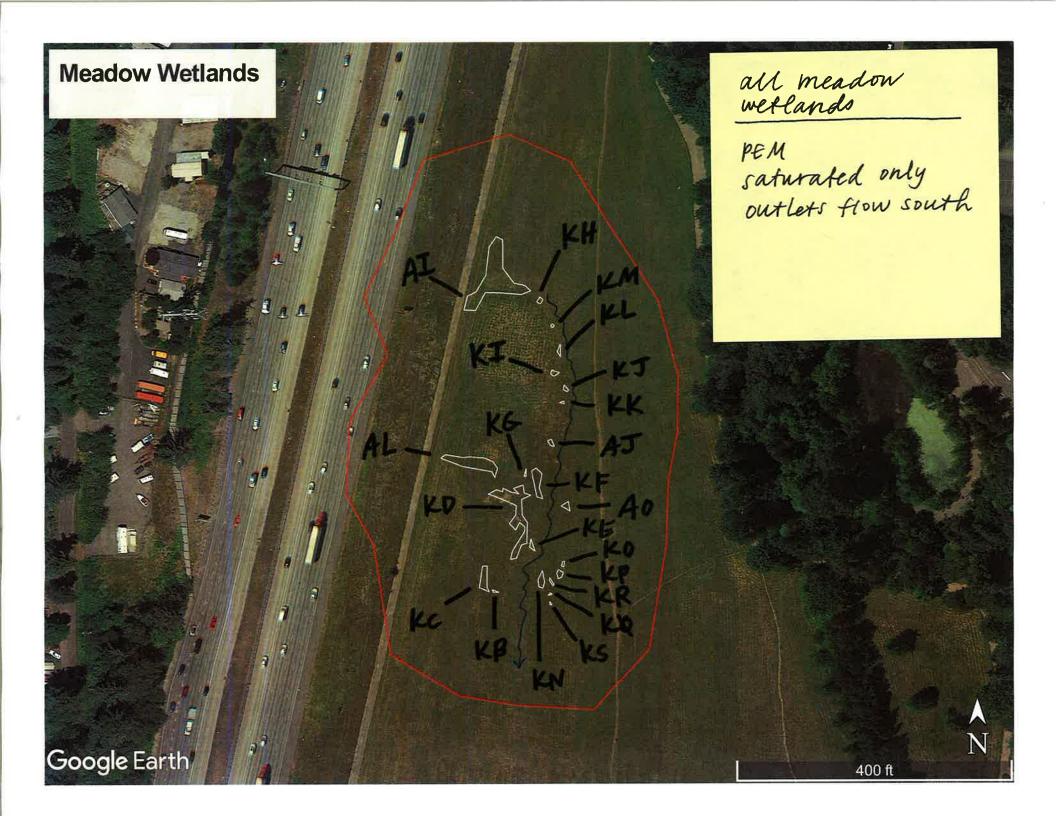
PFO seasonally flooded

PFO no owllet seasonally flooded

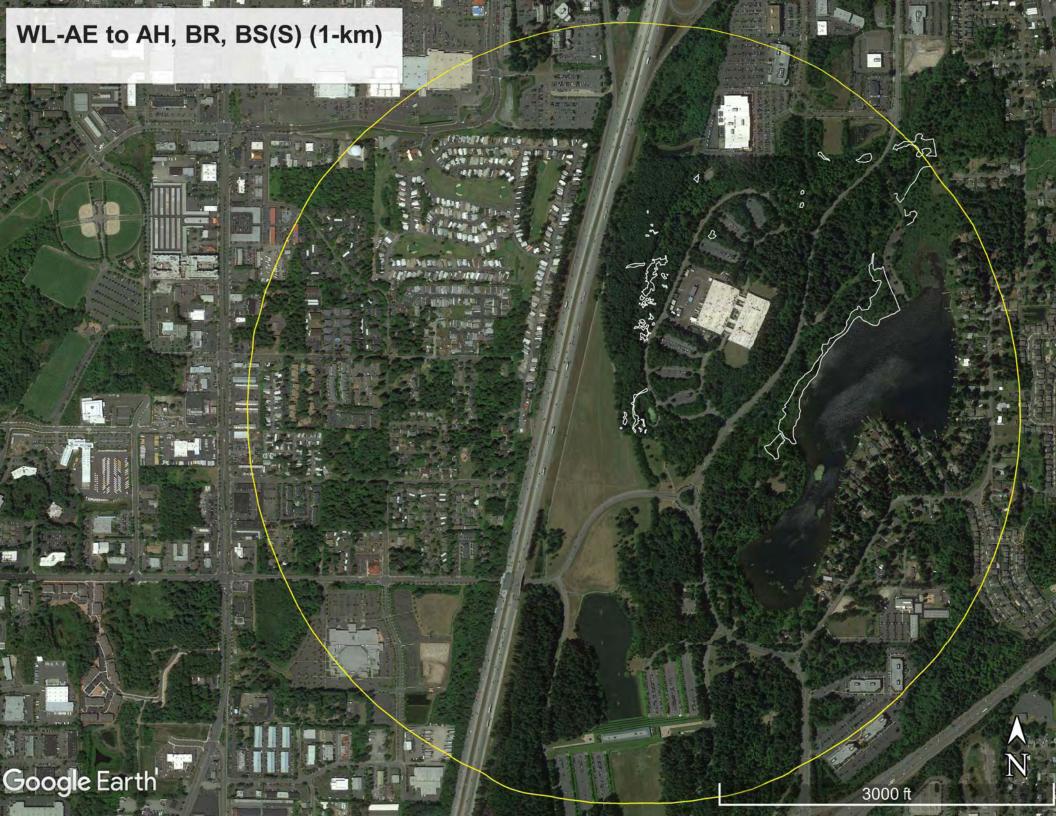


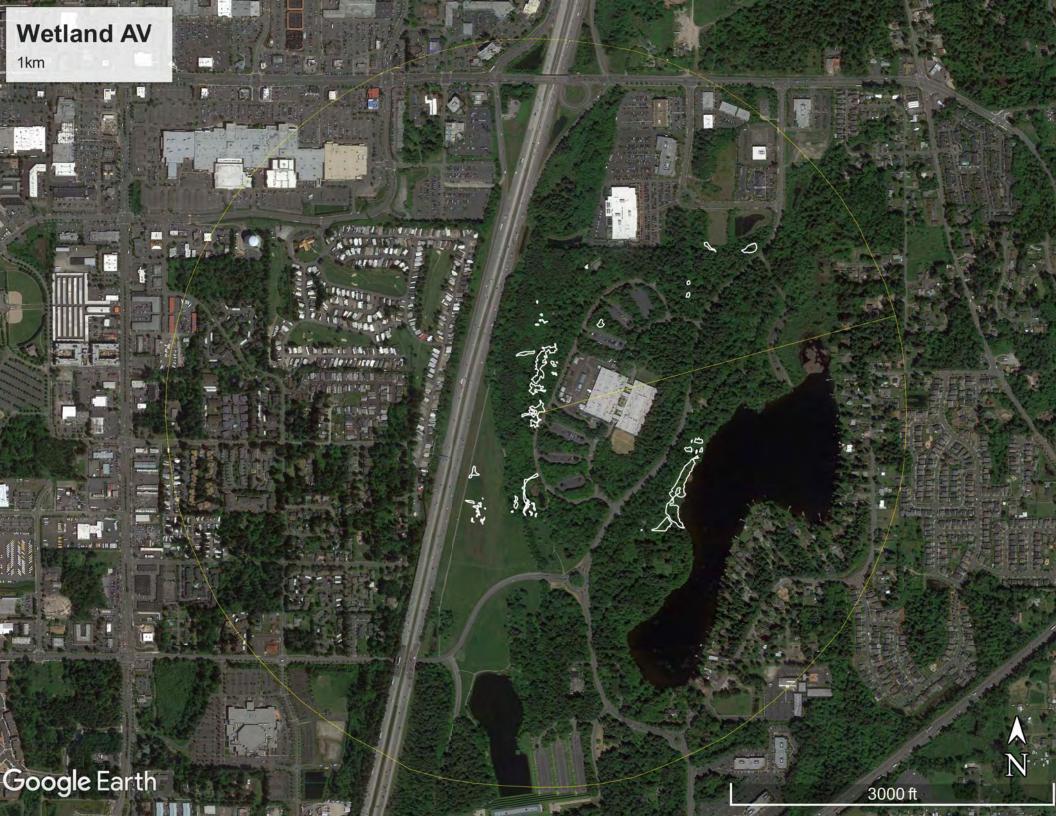


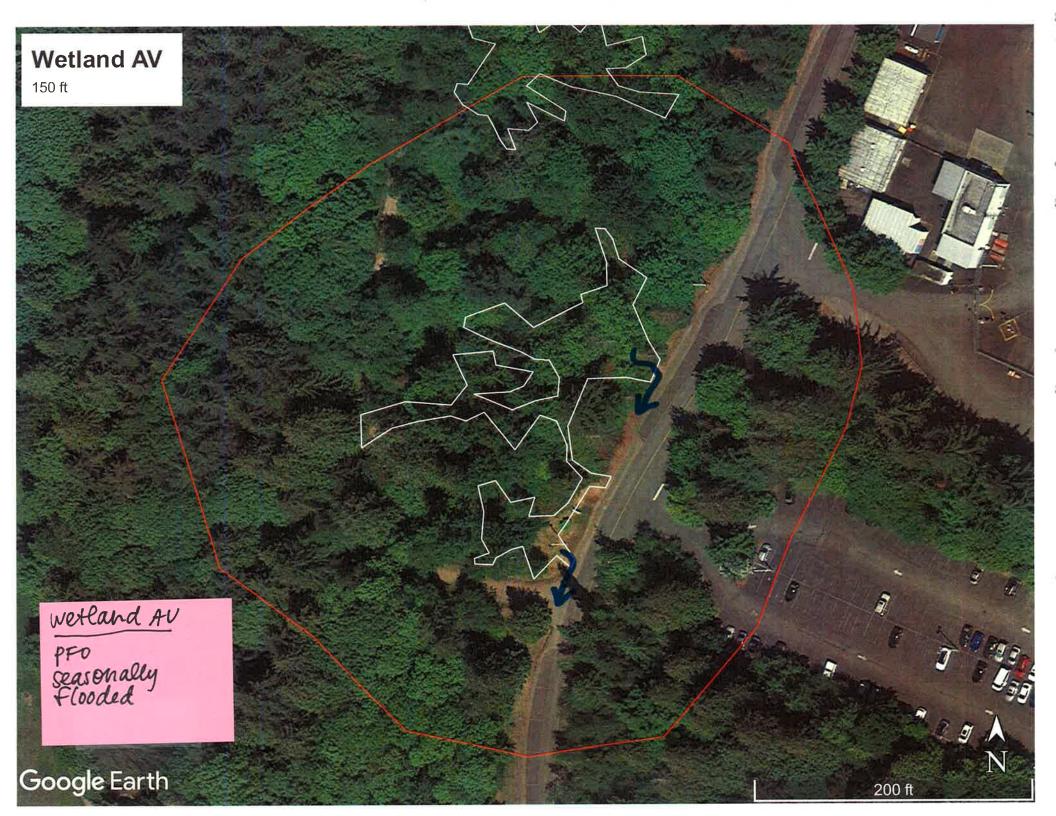


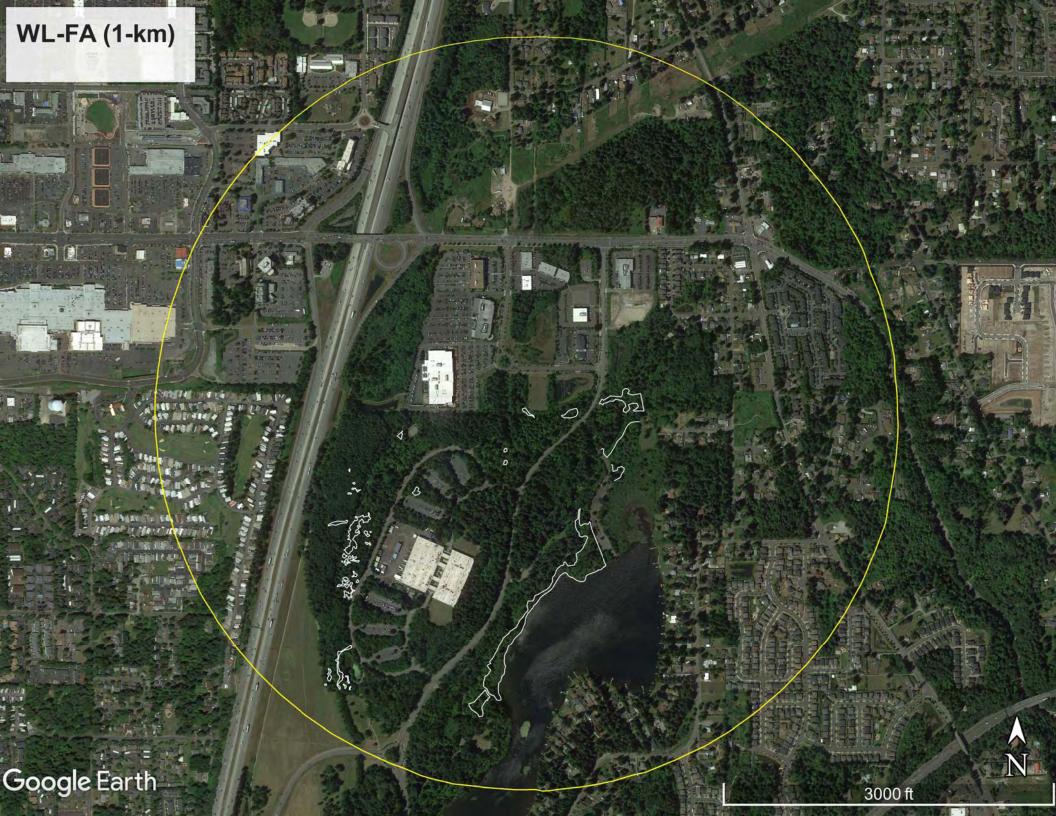


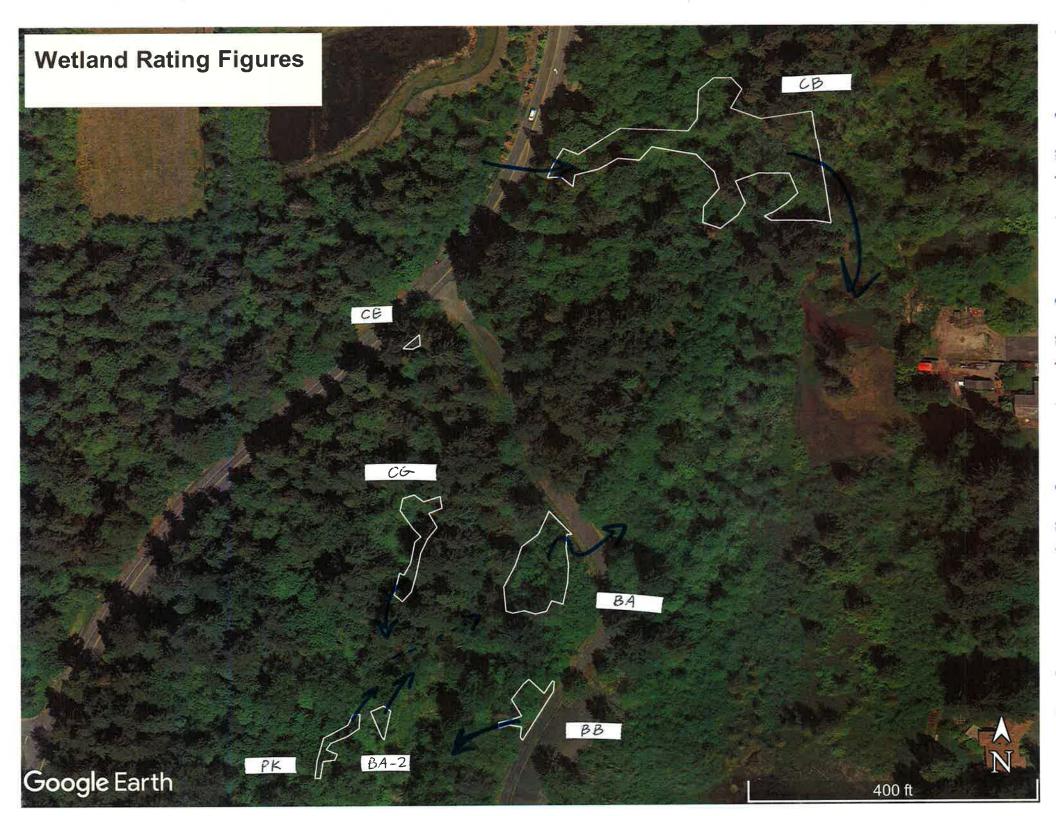


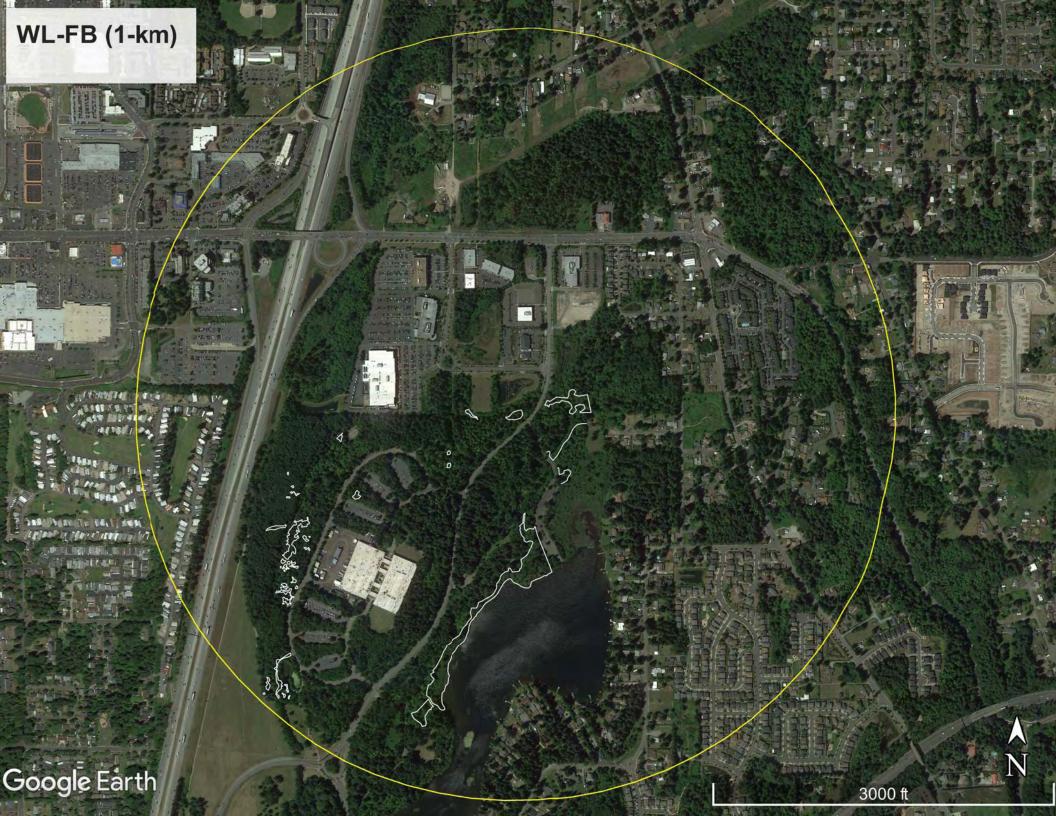


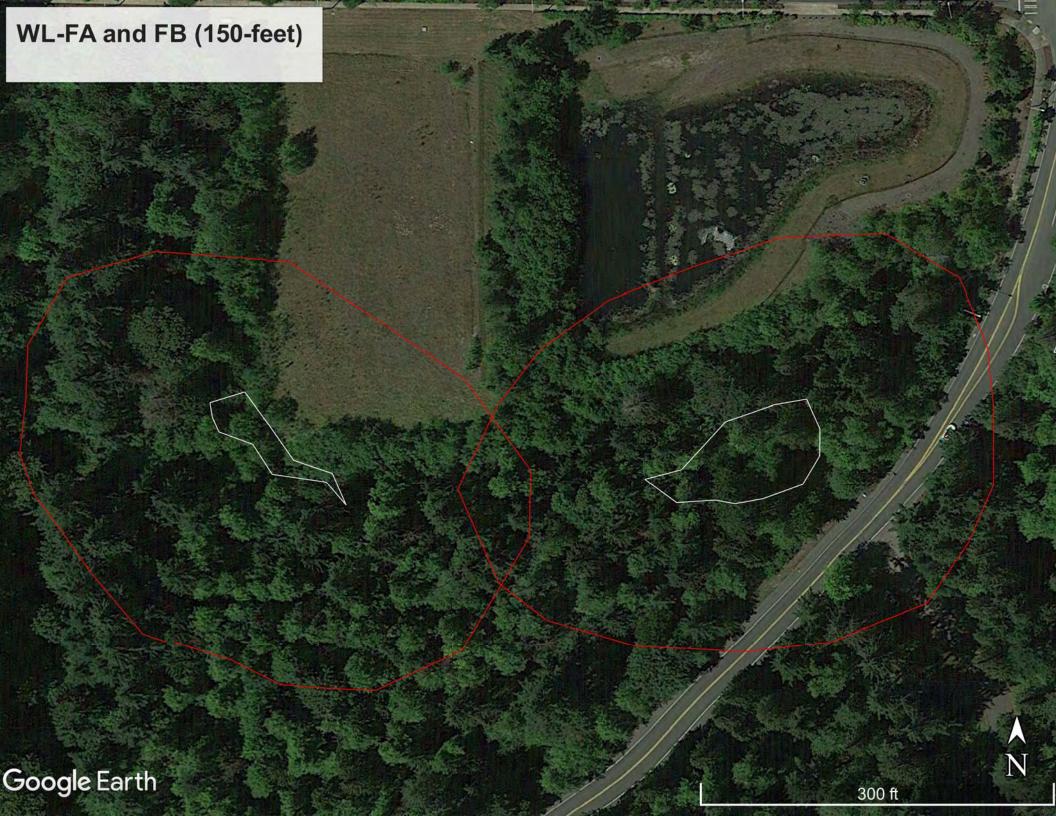




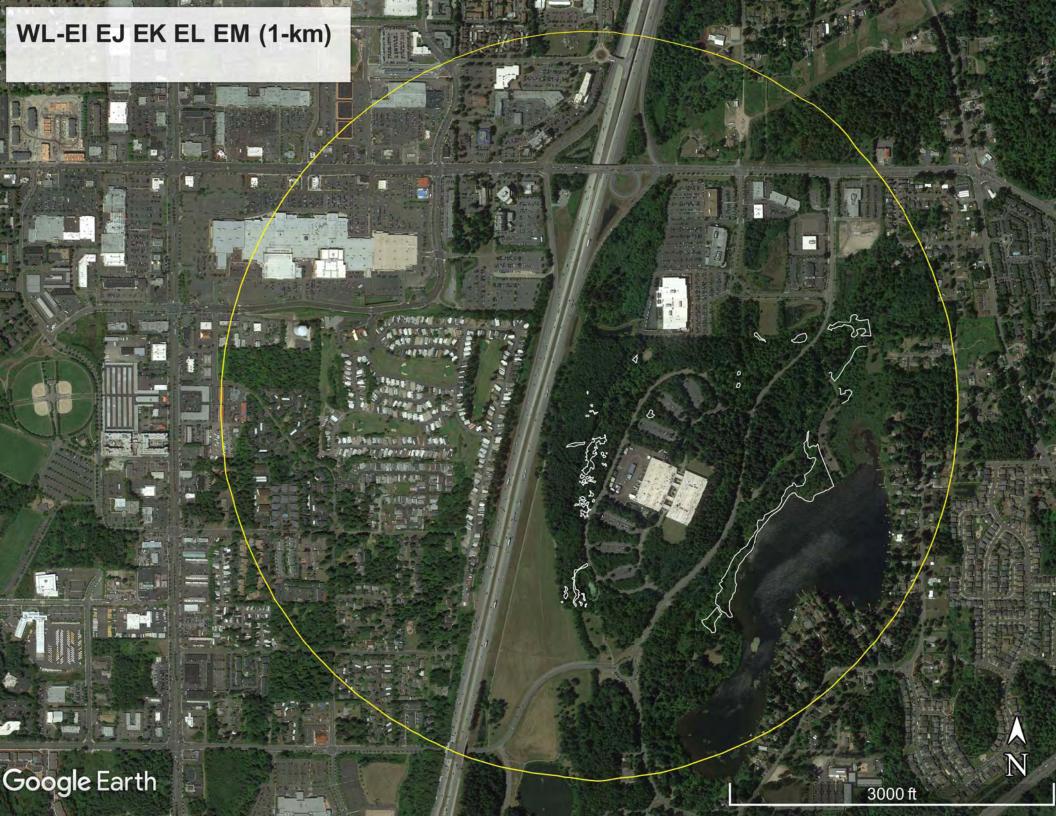




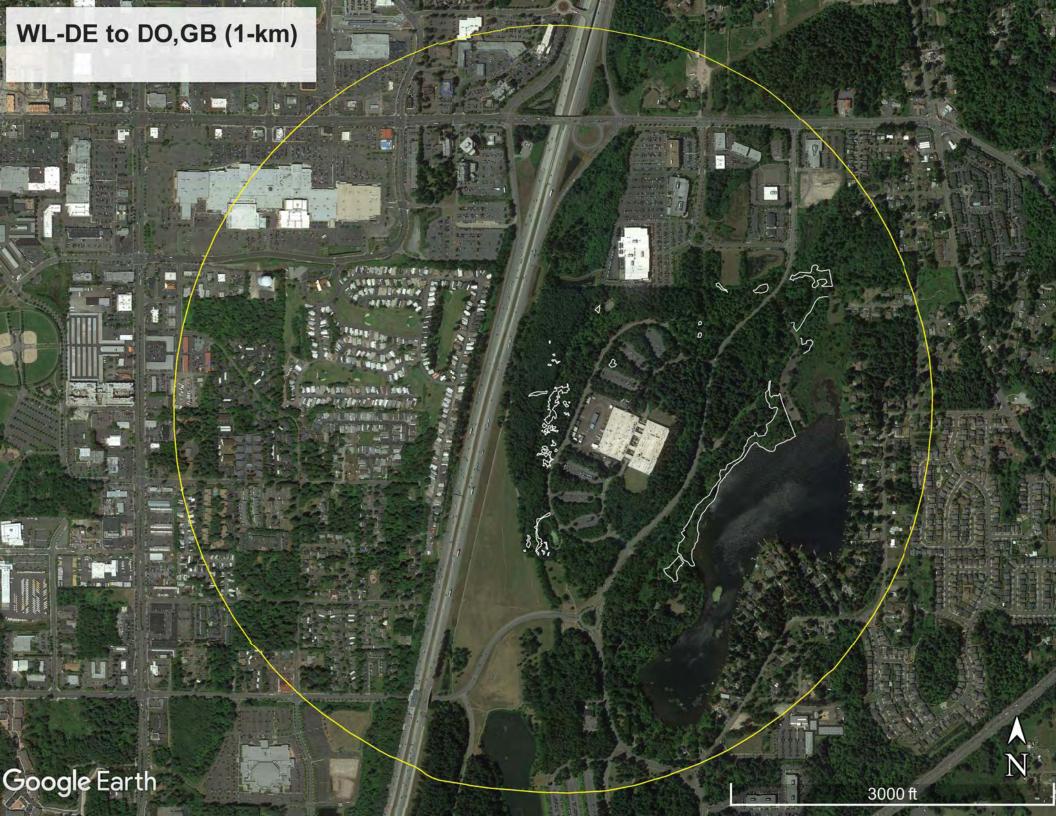


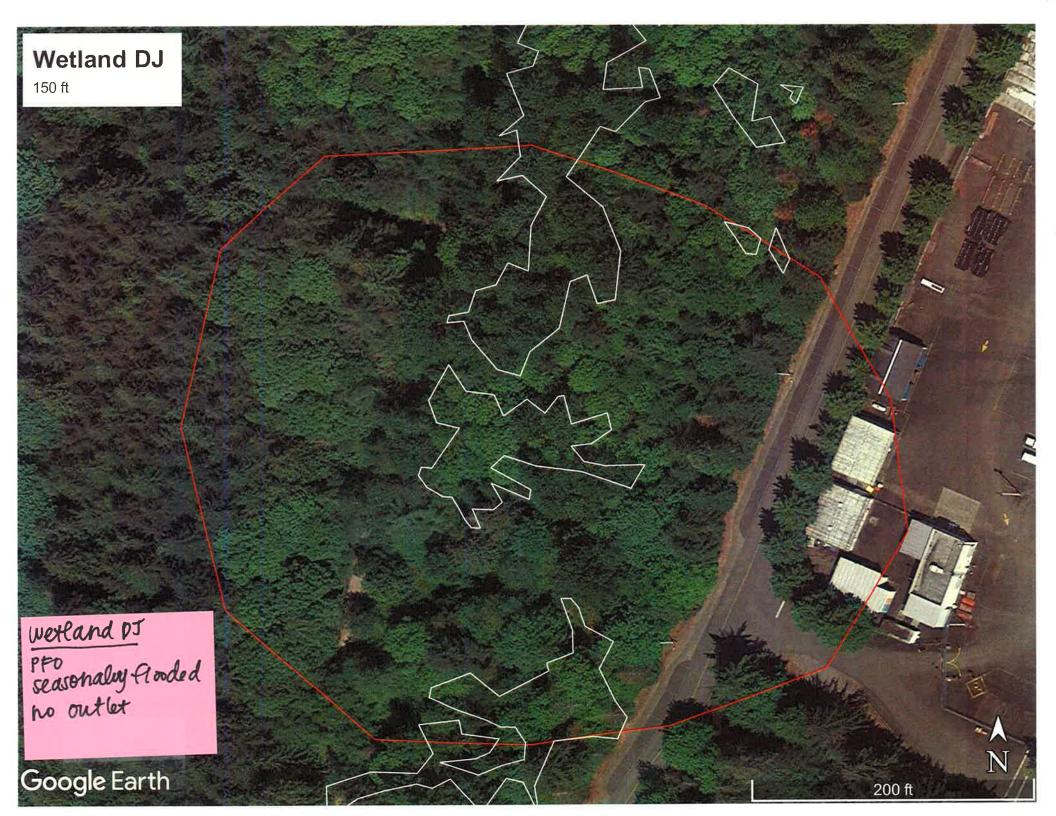


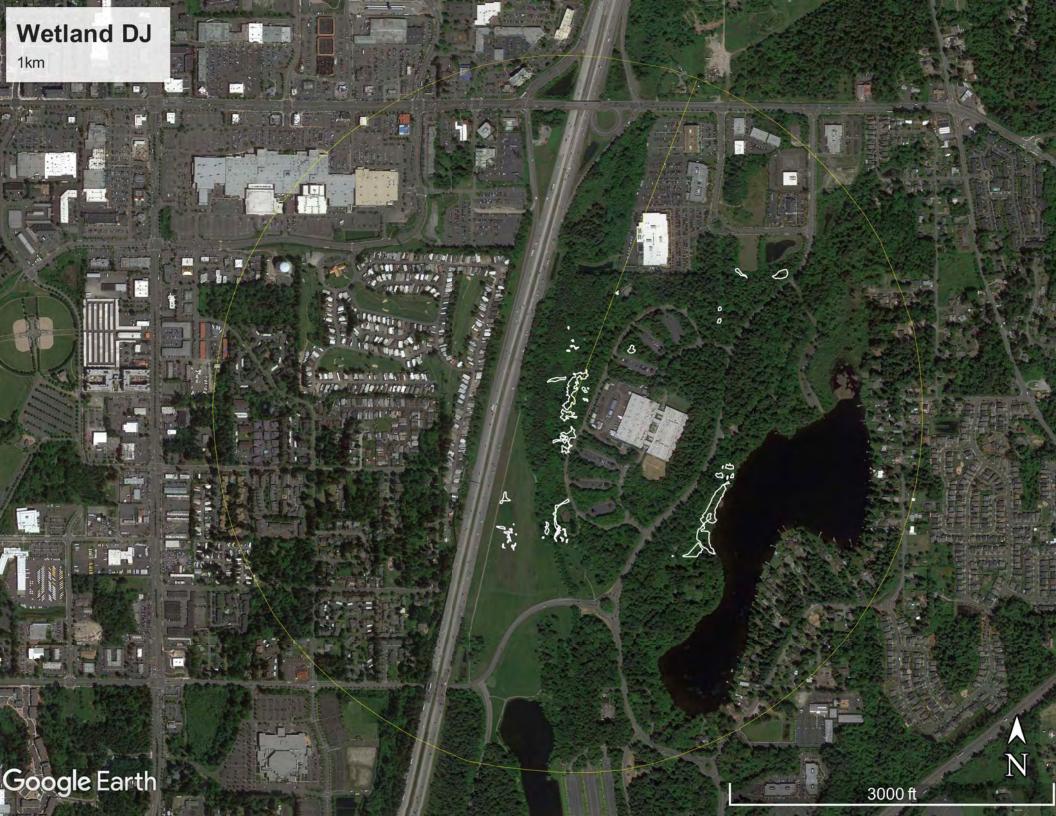


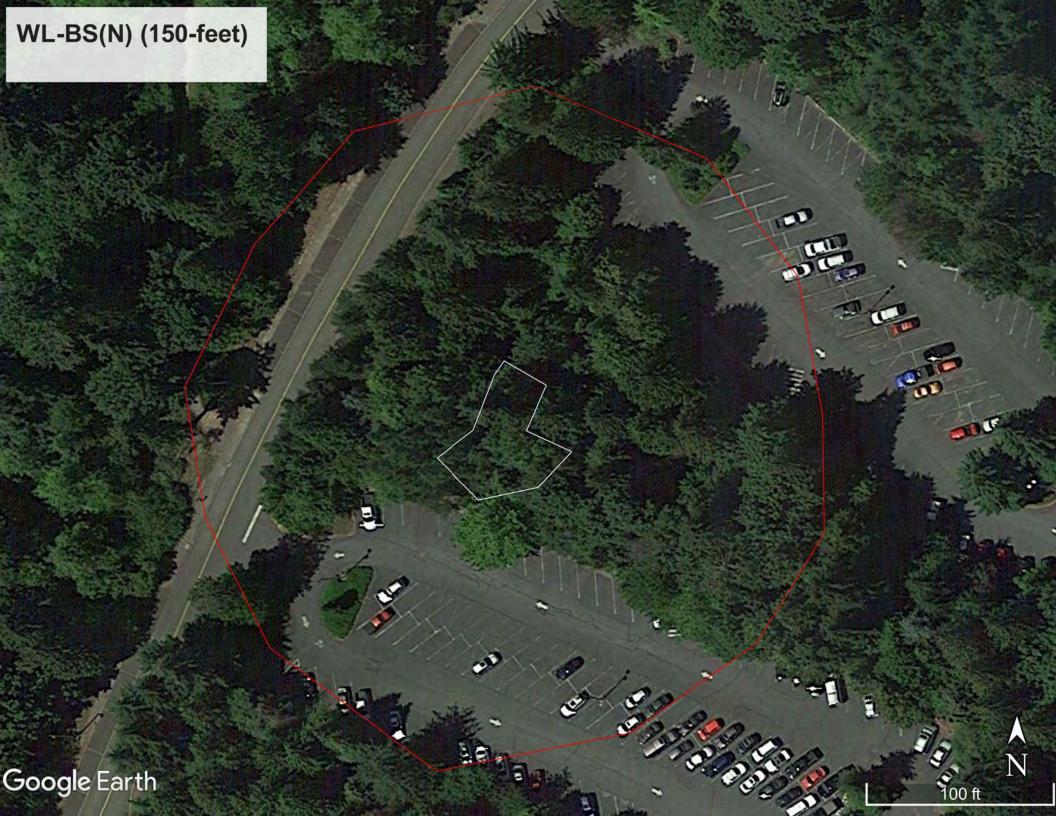


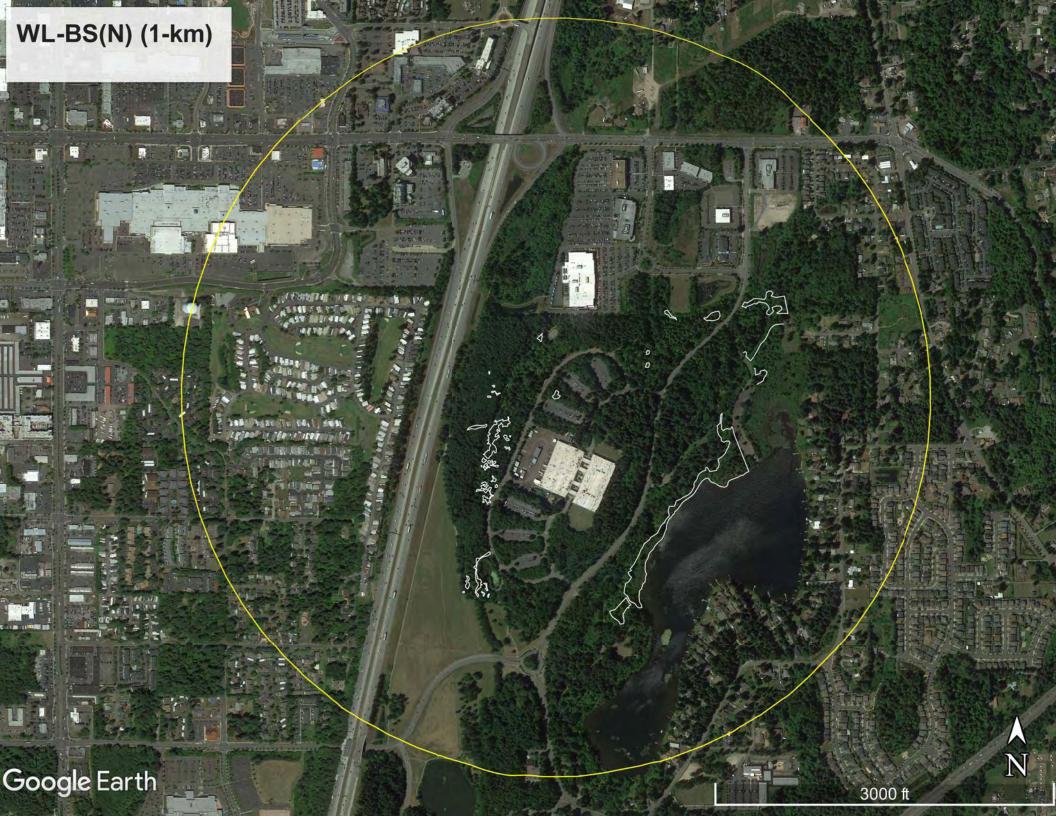




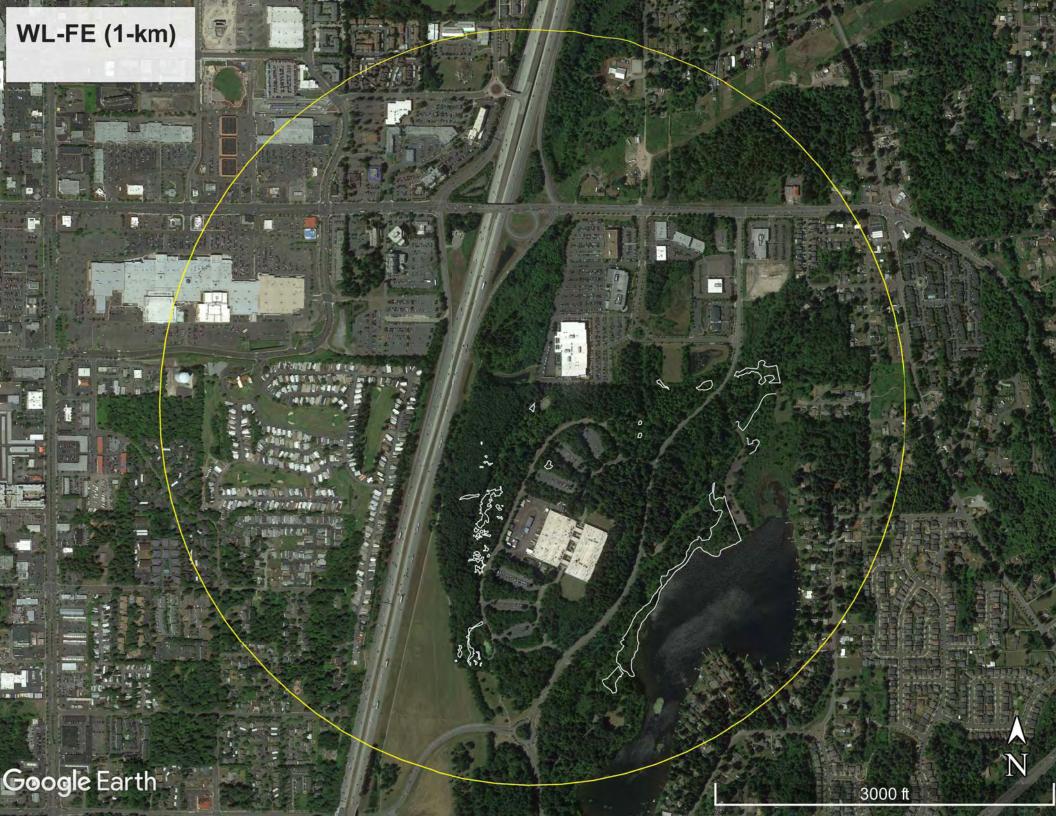




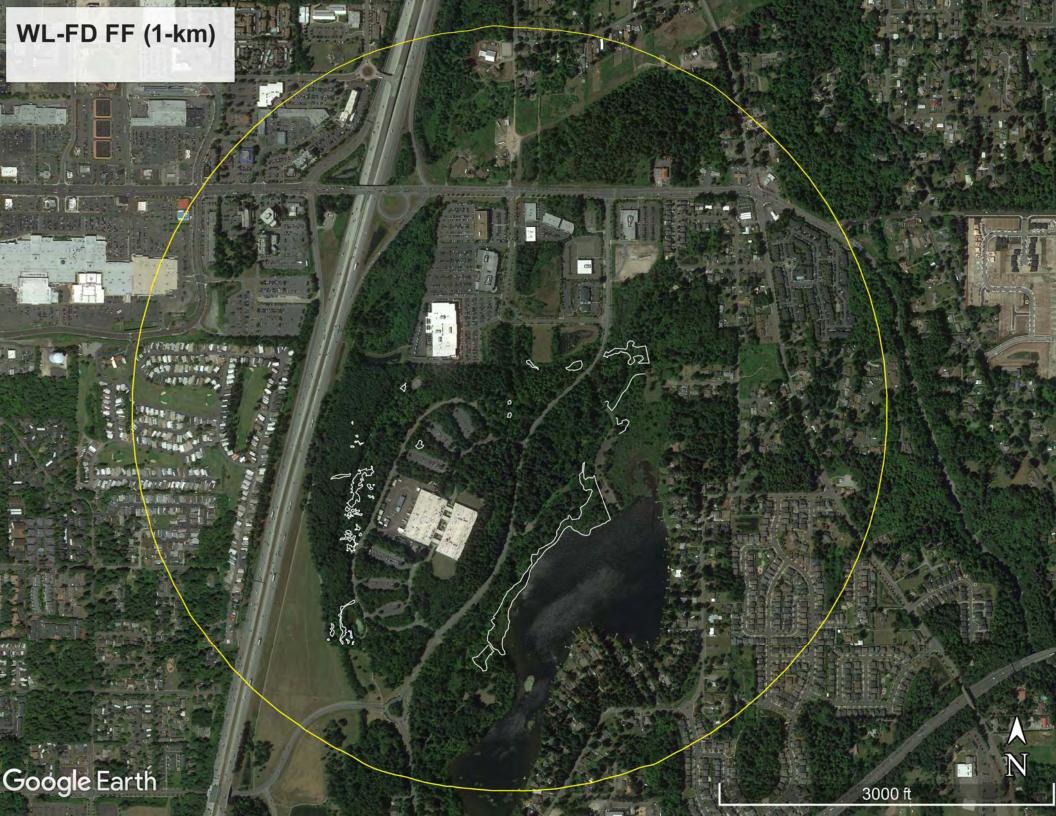


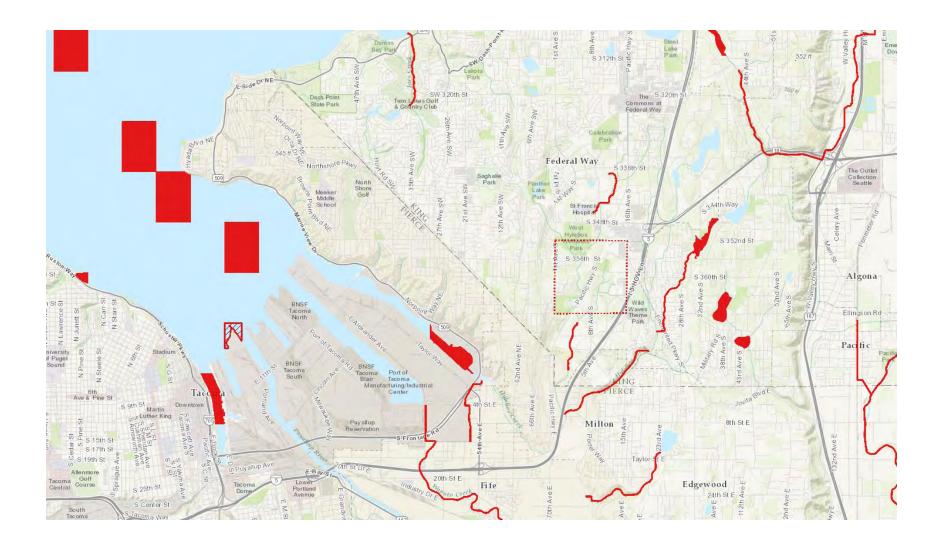














### WATER QUALITY IMPROVEMENT PROJECTS (TMDLs)

Overview of the process
Project Catalog

Funding Opportunities Project Development Priority Lists Related Information TMDL Contacts

by County

#### RELATED ECOLOGY PROGRAMS

Water Quality

#### Water Quality Improvement Projects (TMDLs)

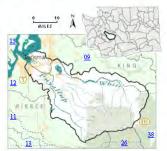
Water Quality Improvement > Water Quality Improvement Projects by WRIA > WRIA 10: Puyallup-White

#### WRIA 10: Puyallup-White

The following table lists overview information for water quality improvement projects (also known as total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.

#### Counties

- · King County
- · Pierce County



Waterbody Name	Pollutant	Status**	TMDL Leads
Clarks Creek Meeker Creek	<u>Dissolved Oxygen</u> Sediment	Approved by EPA Has an implementation plan	<u>Donovan Gray</u> 360-407-6407
	Fecal Coliform	Approved by EPA Has an implementation plan	
Commencement Bay	Dioxin	Approved by EPA	Donovan Gray 360-407-6407
Puvallup River Watershed	Fecal Coliform	Approved by EPA	Donovan Gray 360-407-6407
	Multi-parameter Ammonia-N BOD (5-day)	Approved by EPA	
	White River Watershed Upper White:	Approved by EPA	
	Sediment     Temperature  Lower White     pH	Under Development	
South Prairie Creek Tributary: Wilkeson/Gale Creek	Fecal Coliform Temperature	Approved by EPA Has an implementation plan	<u>Donovan Gray</u> 360-407-6407

<sup>\*\*</sup> Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

#### **APPENDIX E**

#### **CONCEPTUAL MITIGATION PLAN SHEETS**

Sneet w1.u.	Site Overview Plan
Sheet W1.1.	<b>Existing Conditions Plan</b>
Sheet W1.2.	<b>Existing Conditions Plan</b>

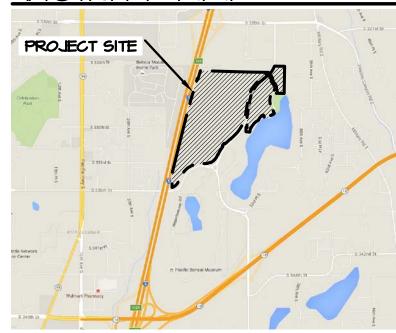
**Sheet W1.3.** Proposed Site Plan, Impacts, and Mitigation Overview Plan **Sheet W1.4.** Proposed Site Plan, Impacts, and Mitigation Overview Plan

Sheet W2.0. Conceptual Grading Plan

**Sheet W2.1.** Conceptual Plant Community Plan **Sheet W2.2.** Conceptual Plant Community Plan

EXISTING TREE CANOPY

### VICINITY MAP



SOURCE: GOOGLE MAPS; WWW.MAPS.GOOGLE.COM (ACCESSED 2/15/2016)



APPLICANT/PROPERTY OWNER FEDERAL WAY CAMPUS, LLC

IIIOO SANTA MONICA BOULEVARD, ADDRESS:

SUITE 850 LOS ANGELES, CALIFORNIA 90025

(562) 803-4761

CONTACT: TOM MESSMER

<u>ARCHITECT</u>

NAME:

PHONE:

CRAFT ARCHITECTS

2505 THIRD AVENUE, SUITE 324 ADDRESS:

SEATTLE, WA 98121

PHONE: (206) 720-7001

SURVEYOR/ENGINEER

ESM, CONSULTING ENGINEERS NAME: 33400 8TH AVE S, SUITE 205 ADDRESS:

FEDERAL WAY, WA 98003

PHONE: (253) 838-6113 CONTACT: ERIC LABRIE, A.I.C.P.

ENVIRONMENTAL CONSULTANT

TALASAEA CONSULTANTS, INC. NAME: 15020 BEAR CREEK RD. NE ADDRESS:

> WOODINVILLE, WA 98077 (425) 861-7550

PHONE: JENNIFER MARRIOTT, PWS CONTACT:

SENIOR ECOLOGIST

ANN OLSEN, RLA SENIOR PROJECT MANAGER

## SHEET INDEX

SHEET TITLE NUMBER

SITE OVERVIEW PLAN

EXISTING CONDITIONS PLAN

EXISTING CONDITIONS PLAN

PROPOSED SITE PLAN, IMPACTS AND MITIGATION OVERVIEW PLAN

PROPOSED SITE PLAN, IMPACTS AND MITIGATION OVERVIEW PLAN

CONCEPTUAL GRADING PLAN & DETAILS

CONCEPTUAL PLANT COMMUNITY PLAN

CONCEPTUAL PLANT COMMUNITY PLAN

NOT FOR CONSTRUCTION THESE PLANS HAVE BEEN SUBMITTED TO THE APPROPRIATE AGENCIES FOR REVIEW AND APPROVAL. UNTIL APPROVED, THESE PLANS ARE: SUBJECT TO REVISION

Know what's **below.** Call before you dig.

- SURVEY AND SITE PLAN PROVIDED BY ESM, 33400 8TH AVE S, SUITE 205 FEDERAL WAY,
- WA 98003, (253) 838-6113. SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL
- ENHANCEMENT. THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT AND CONCEPTUAL MITIGATION PLAN PREPARED BY TALASAEA CONSULTANTS IN SEPTEMBER, 2017.

 
 Date
 9-20-2017

 Scale
 AS SHOWN

 Designed
 AO

 Drawn
 MM

 Checked
 JM/AO

 Approved
 BS
 Project #<u>1572C</u>

© Copyright - Talasaea Consultants, INC.

Sheet # M.O

TALASAEA EA

CONSULTANTS, INC.

Resource & Environmental Planning

15020 Bear Creek Road Northeast - Woodinville, Washington 98077

CRITICAL AREAS CONCEPTUAL MITIGATION PLEXISTING CONDITIONS PLAN
OREENLINE BUSINESS PARK
FEDERAL MAY, WASHINGTON

Beatisions
Colly COMMENTS
CITY COMMENTS
Drawn
Checked

 Date
 9-20-2017

 Scale
 AS SHOWN

 Designed
 AQ

 Drawn
 MW

 Checked
 JM/AQ

 Approved
 BS

Project #1572C

Sheet # MI.

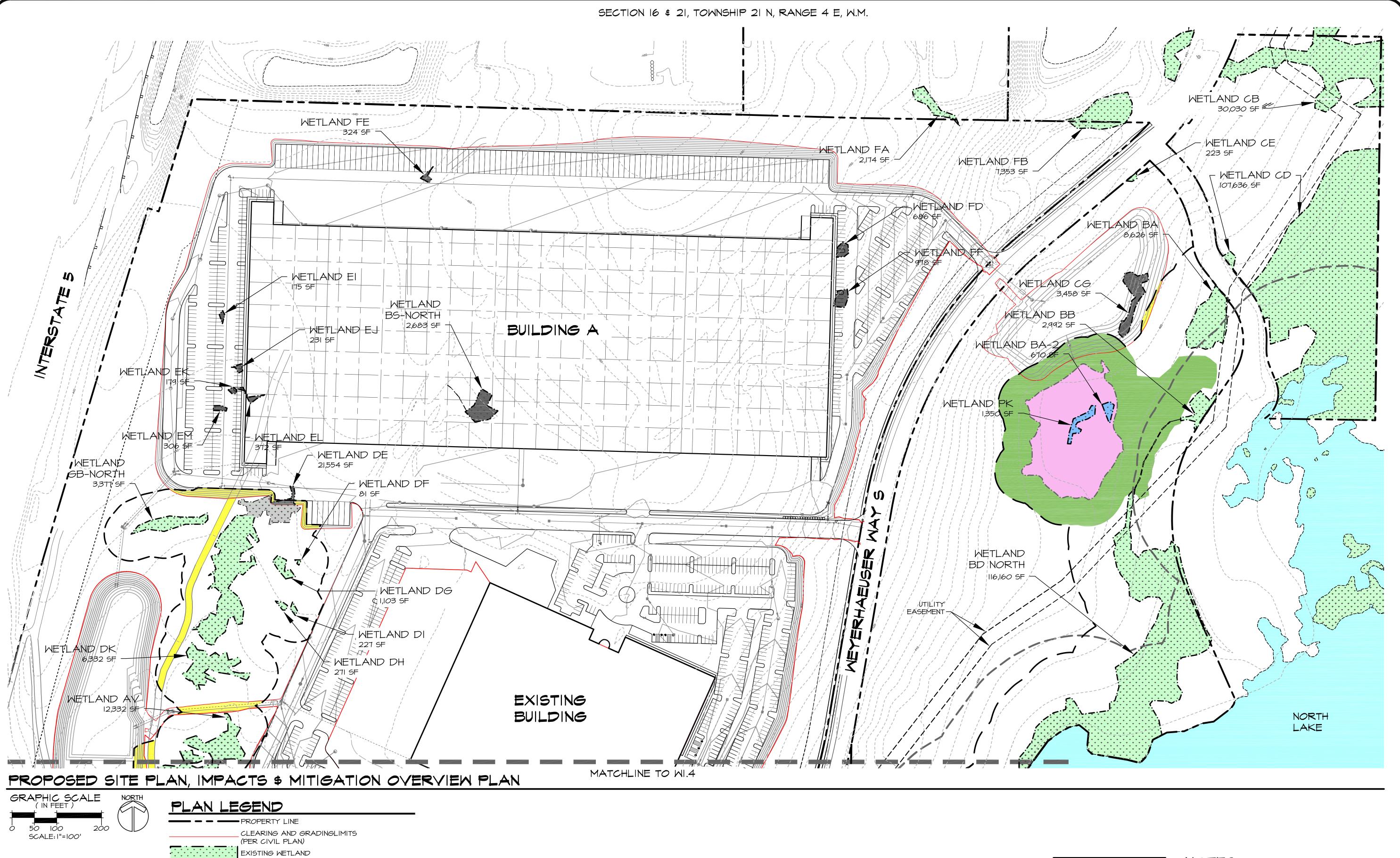
© Copyright - Talasaea Consultants, INC.

JI O III O

Date 9-20-2017
Scale AS SHOWN
Designed AO
Drawn MM
Checked JM/AO
Approved BS

Project #<u>1572</u>C Sheet # M.2

© Copyright - Talasaea Consultants, INC.



NOTES

- SURVEY AND SITE PLAN PROVIDED BY ESM, 33400 8TH AVE S, SUITE 205 FEDERAL WAY,
- WA 98003, (253) 838-6113.
  SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
- THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT AND CONCEPTUAL MITIGATION PLAN PREPARED BY TALASAEA CONSULTANTS IN SEPTEMBER, 2017.

SUBJECT TO REVISION

Know what's **below.** Call before you dig.

NOT FOR CONSTRUCTION

THESE PLANS HAVE BEEN
SUBMITTED TO THE APPROPRIATE
AGENCIES FOR REVIEW AND
APPROVAL. UNTIL APPROVED,
THESE PLANS ARE:

Date 9-20-2017
Scale AS SHOWN
Designed AO
Drawn MM
Checked JM/AO
Approved BS Project #<u>1572C</u>

Sheet # MI.3 © Copyright - Talasaea Consultants, INC.

FOR IMPACTS AND MITIGATION

--- POST CONSTRUCTION CRITICAL AREAS BUFFER

- 200' SHORELINE MANAGEMENT ZONE

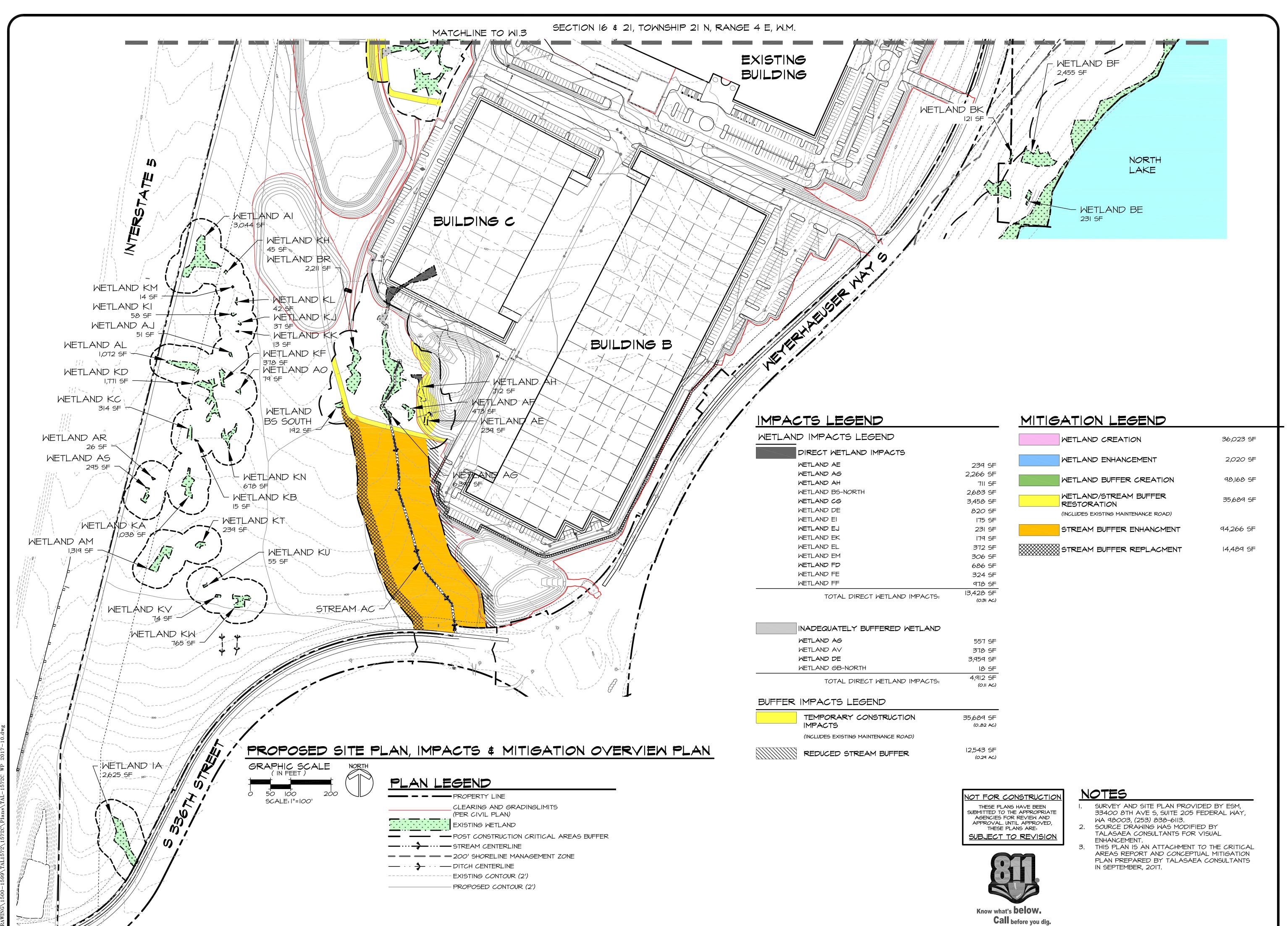
SEE SHEET WI.4 FOR ALL LEGENDS

- PROPOSED CONTOUR (2')

-···- STREAM CENTERLINE

— · · • DITCH CENTERLINE

-----EXISTING CONTOUR (2')



TALASAEA

CONSULTANTS, INC.

Resource & Environmental Planning

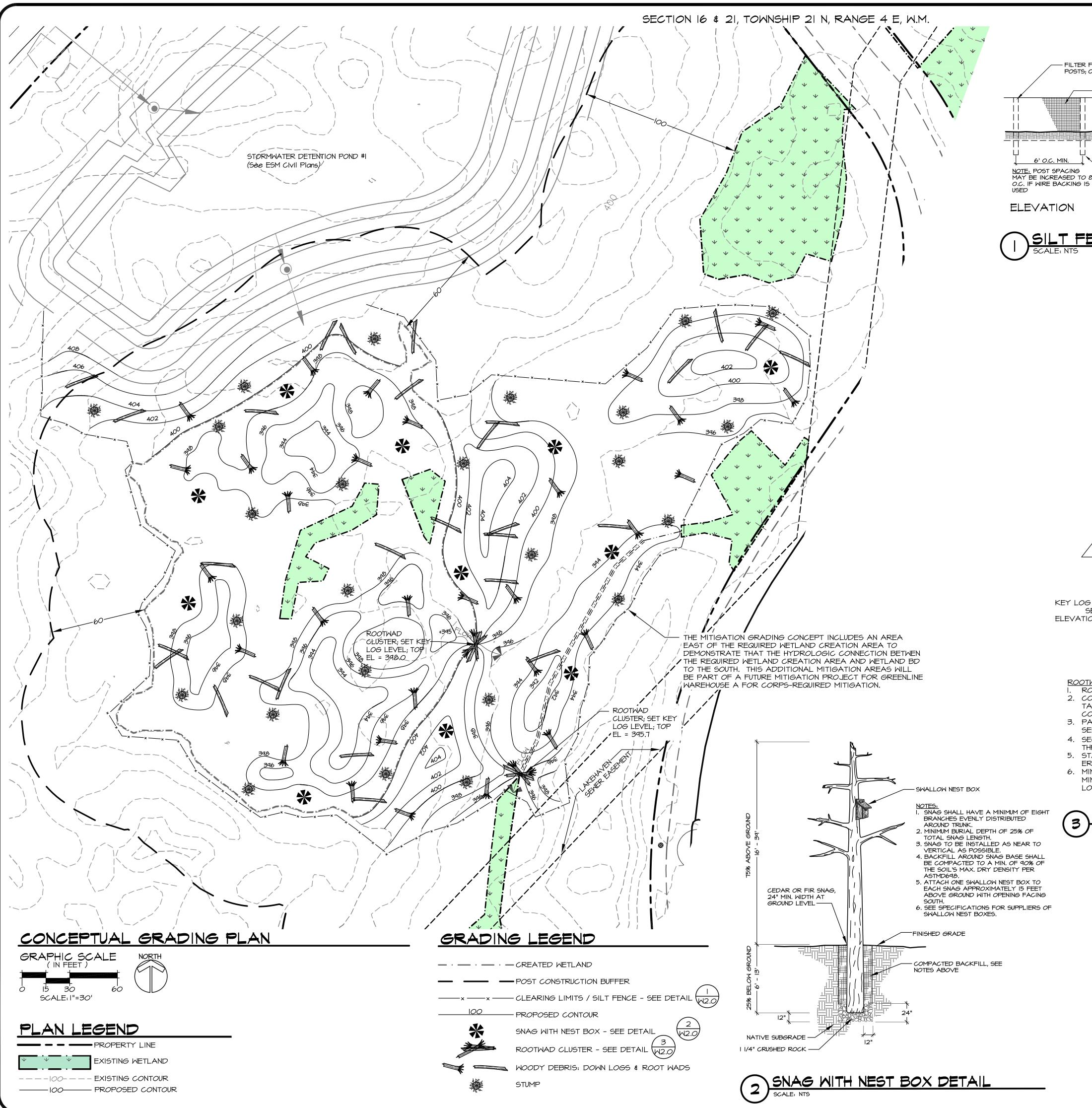
ORITICAL AREAS CONCEPTUAL MITIGATION PLAN PROPOSED SITE PLAN, IMPACTS & MITIGATION OVERVIEW PL, OREENLINE BUSINESS PARK FEDERAL WAY WASHINGTON

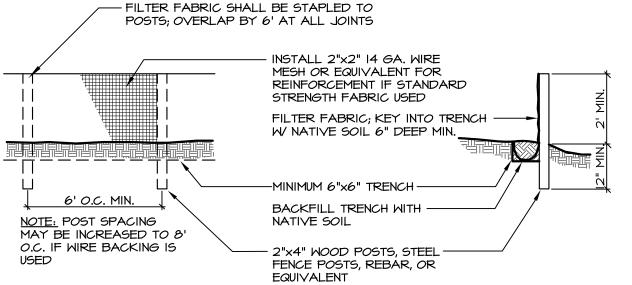
Date 9-20-2017
Scale AS SHOWN
Designed AO
Drawn MM
Checked JM/AO
Approved BS

Approved <u>BS</u>

Project #1572C

© Copyright - Talasaea Consultants, INC





SILT FENCE MAINTENANCE STANDARDS:

I. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.

2. IF CONCENTRATED FLOWS ARE EVIDENT UPSLOPE OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A

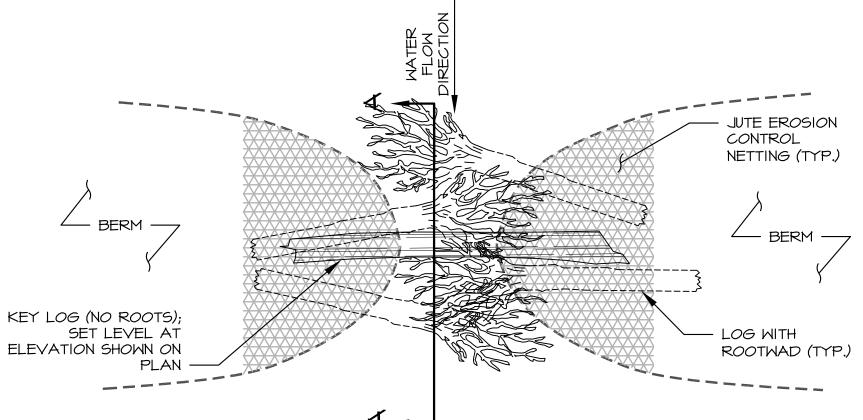
SEDIMENT POND. . CONTRACTOR SHALL CHECK THE UPSLOPE SIDE OF THE FENCE FOR SIGNS OF CLOGGING AND SUBSEQUENT CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE AND/OR REMOVE THE TRAPPED SEDIMENT.

4. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION EXCEEDS 6" IN DEPTH.

KEY LOG (NO LOG WITH ROOTS); SET LEVEL ROOTWAD (TYP.) AT ELEVATION SHOWN ON PLAN - WATER LEVEL SEAL LOG/SOIL INTERFACE OF ALL LOGS COMPACTED WITH BENTONITE CLAY NATIVE SOIL

CROSS SECTION

SECTION A



ROOTWAD CLUSTER INSTALLATION NOTES:

- ROOTWAD CLUSTERS SHALL BE INSTALLED WHERE SHOWN ON GRADING PLAN. 2. CONFIGURATION OF ROOTWAD CLUSTER SHOWN IN THIS DETAIL IS CONCEPTUAL; TALASAEA SHALL WORK WITH CONTRACTOR IN THE FIELD TO DETERMINE FINAL
- CONFIGURATION OF KEY LOG AND ROOTWAD LOGS. 3. PACK BENTONITE AROUND LOG/SOIL INTERFACE OF ALL LOGS TO PREVENT SEEPAGE AND EROSION AROUND LOGS.
- 4. SECURE EACH KEY LOG WITH TWO (2) 6-FOOT LENGTHS OF 3" REBAR DRIVEN
- THROUGH ENDS OF LOG INTO SUBGRADE APPROX. 12" FROM ENDS OF LOG. 5. STABLILIZE BERM SLOPES ADJACENT TO ROOTWAD CLUSTERS WITH JUTE
- EROSION CONTROL NETTING AND MULCH. 6. MINIMUM LOG LENGTH: 12 FEET (NOT INCLUDING ROOTS)
- MINIMUM LOG DIAMETER: 15 INCHES LOG SPECIES: WESTERN RED CEDAR

ROOTWAD CLUSTER DETAIL

NOT FOR CONSTRUCTION THESE PLANS HAVE BEEN SUBMITTED TO THE APPROPRIATE AGENCIES FOR REVIEW AND APPROVAL. UNTIL APPROVED, THESE PLANS ARE:

SUBJECT TO REVISION



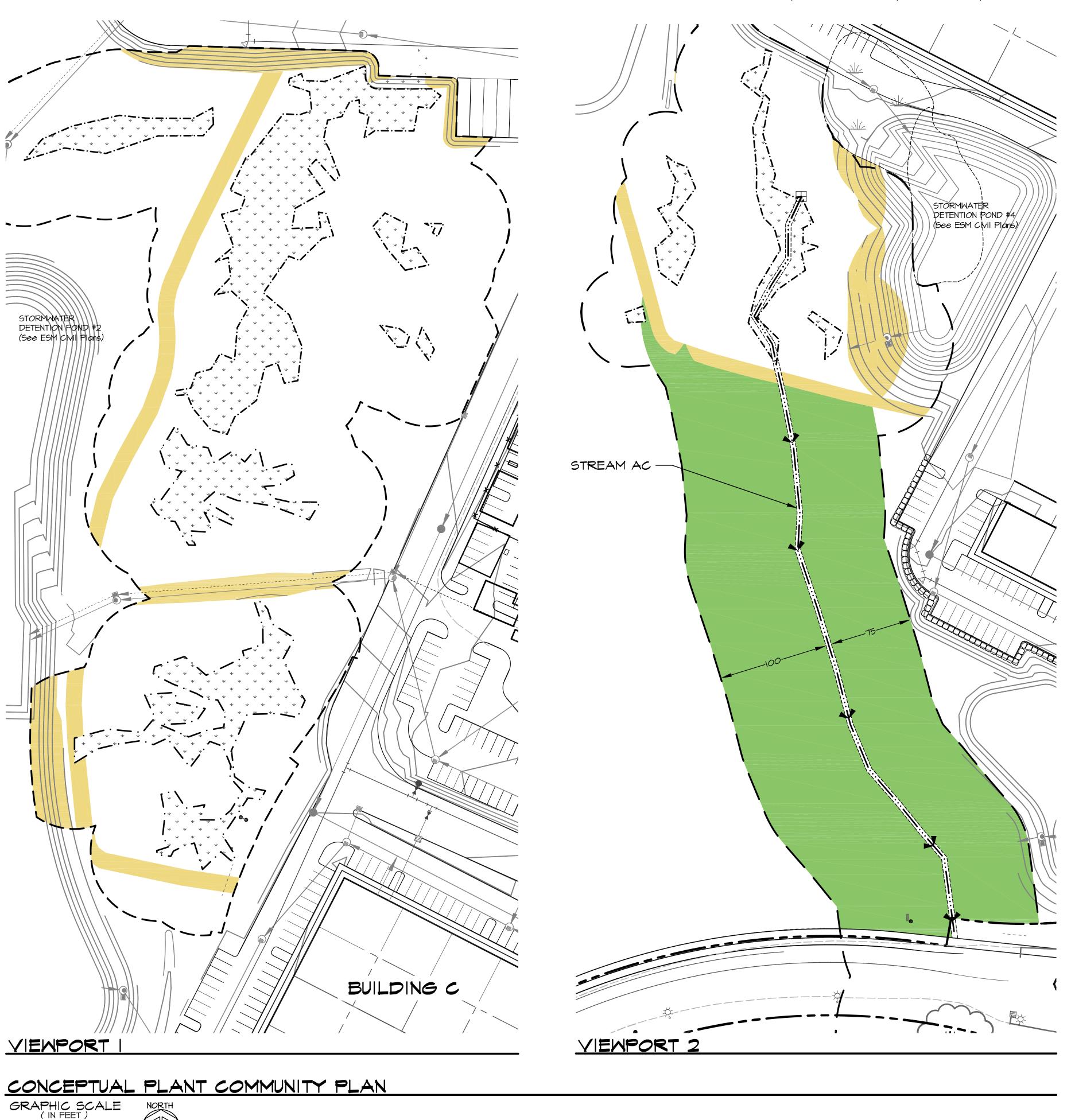
Call before you dig.

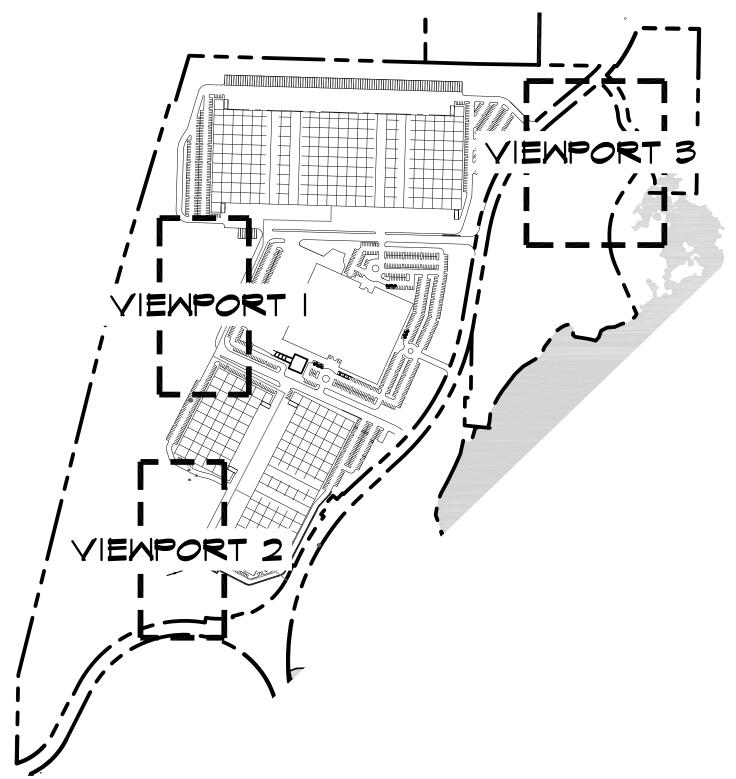
- SURVEY AND SITE PLAN PROVIDED BY ESM, 33400 8TH AVE S, SUITE 205 FEDERAL WAY,
- MA 98003, (253) 838-6113. SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL
- ENHANCEMENT. THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT AND CONCEPTUAL MITIGATION PLAN PREPARED BY TALASAEA CONSULTANTS

IN SEPTEMBER, 2017.

9-20-2017 AS SHOWN Scale Designed <u>AO</u> Drawn <u>MM</u> Checked <u>JM/AO</u> Approved <u>BS</u> Project #<u>1572C</u> Sheet # **M2.0** 

© Copyright - Talasaea Consultants, INC





## PLANT COMMUNITIES KEY

SCALE: 1"=500'

## PLANT COMMUNITIES LEGEND

ENHANCED UNDISTURBED BUFFER

TREES

SCIENTIFIC NAME COMMON NAME ACER CIRCINATUM VINE MAPLE PACIFIC DOGWOOD CORNUS NUTTALLII CORYLUS CORNUTA WESTERN HAZELNUT

SHRUBS

AMELANCHIER ALNIFOLIA SERVICEBERRY OEMLERIA CERASIFORMIS INDIAN PLUM SAMBUCUS RACEMOSA RED ELDERBERRY

#### FORESTED BUFFER

#### TREES

SCIENTIFIC NAME ACER CIRCINATUM ACER MACROPHYLLUM BETULA PAPYRIFERA CORNUS NUTTALLII CORYLUS CORNUTA PSEUDOTSUGA MENZIESII SORBUS SITCHENSIS ATAOIJA ALUHT

PACIFIC DOGWOOD WESTERN HAZELNUT DOUGLAS FIR SITKA MOUNTAIN ASH WESTERN RED CEDAR TSUGA HETEROPHYLLA WESTERN HEMLOCK

SCIENTIFIC NAME AMELANCHIER ALNIFOLIA GAULTHERIA SHALLON SALAL HOLODISCUS DISCOLOR OCEANSPRAY MAHONIA AQUIFOLIUM TALL OREGONGRAPE OEMLERIA CERASIFORMIS INDIAN PLUM POLYSTICHUM MUNITUM SWORD FERN RIBES SANGUINEUM RED CURRANT RUBUS PARVIFLORUS SAMBUCUS RACEMOSA

#### COMMON NAME SERVICEBERRY

COMMON NAME

BIG LEAF MAPLE

VINE MAPLE

PAPER BIRCH

NOT FOR CONSTRUCTION THESE PLANS HAVE BEEN
SUBMITTED TO THE APPROPRIATE
AGENCIES FOR REVIEW AND
APPROVAL. UNTIL APPROVED, THESE PLANS ARE: SUBJECT TO REVISION



- SURVEY AND SITE PLAN PROVIDED BY ESM, 33400 8TH AVE S, SUITE 205 FEDERAL WAY, WA 98003, (253) 838-6113.
- SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
- THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT AND CONCEPTUAL MITIGATION PLAN PREPARED BY TALASAEA CONSULTANTS IN SEPTEMBER, 2017.

 Date
 9-20-2017

 Scale
 AS SHOWN

 Designed
 AO

 Drawn
 MM

 Checked
 JM/AO

 Approved
 BS

Project #<u>1572</u>C

Sheet # **M3.0** 

© Copyright - Talasaea Consultants, INC.

SCALE: 1"=50' PLAN LEGEND

> - PROPERTY LINE ↓ ↓ ↓ EXISTING WETLAND POST CONSTRUCTION

CRITICAL AREAS BUFFER

SHRUBS

THIMBLEBERRY RED ELDERBERRY SYMPHORICARPOS ALBUS COMMON SNOWBERRY



POST CONSTRUCTION

CRITICAL AREAS BUFFER

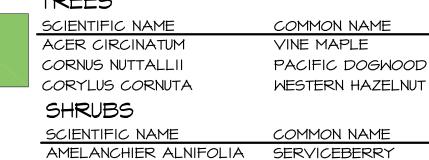
**—** · **—** · **—** ·

### PLANT COMMUNITIES LEGEND

#### ENHANCED UNDISTURBED BUFFER

OEMLERIA CERASIFORMIS

SAMBUCUS RACEMOSA



INDIAN PLUM

INDIAN PLUM

SWORD FERN

RED CURRANT

THIMBLEBERRY

SITKA WILLOW\*

RED ELDERBERRY

RED ELDERBERRY

## FORESTED BUFFER

#### TREES

SCIENTIFIC NAME	COMMON NAME
ACER CIRCINATUM	VINE MAPLE
ACER MACROPHYLLUM	BIG LEAF MAPLE
BETULA PAPYRIFERA	PAPER BIRCH
CORNUS NUTTALLII	PACIFIC DOGHOOD
CORYLUS CORNUTA	WESTERN HAZELNUT
PSEUDOTSUGA MENZIESII	DOUGLAS FIR
SORBUS SITCHENSIS	SITKA MOUNTAIN ASH
ATAOIJ9 ALUHT	WESTERN RED CEDAR
TSUGA HETEROPHYLLA	WESTERN HEMLOCK
SHRUBS	
SCIENTIFIC NAME	COMMON NAME
AMELANCHIER ALNIFOLIA	SERVICEBERRY
GAULTHERIA SHALLON	SALAL
HOLODISCUS DISCOLOR	OCEANSPRAY
MAHONIA AQUIFOLIUM	TALL OREGONGRAPE
	SCIENTIFIC NAME  ACER CIRCINATUM  ACER MACROPHYLLUM  BETULA PAPYRIFERA  CORNUS NUTTALLII  CORYLUS CORNUTA  PSEUDOTSUGA MENZIESII  SORBUS SITCHENSIS  THUJA PLICATA  TSUGA HETEROPHYLLA  SHRUBS  SCIENTIFIC NAME  AMELANCHIER ALNIFOLIA  GAULTHERIA SHALLON  HOLODISCUS DISCOLOR

#### FORESTED/SCRUB-SHRUB WETLAND

OEMLERIA CERASIFORMIS

POLYSTICHUM MUNITUM

RUBUS PARVIFLORUS

SAMBUCUS RACEMOSA

RIBES SANGUINEUM

SCIENTIFIC NAME	COMMON NAME
MALUS FUSCA	WESTERN CRABAPPLE
FRAXINUS LATIFOLIA	OREGON ASH
PICEA SITCHENSIS	SITKA SPRUCE
RHAMNUS PURSHIANA	CASCARA
SALIX LASIANDRA	PACIFIC WILLOW*
ATAOIJA ALUHT	WESTERN RED CEDAR
SHRUBS	
SCIENTIFIC NAME	COMMON NAME
CORNUS ALBA	RED-OSIER DOGWOOD
CRATAEGUS DOUGLASII	BLACK HAMTHORN
LONICERA INVOLUCRATA	BLACK TWIN-BERRY
PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK
ROSA NUTKANA	NOOTKA ROSE
ROSA PISOCARPA	CLUSTERED WILD ROSE
RUBUS SPECTABILIS	SALMONBERRY
SALIX SCOULERIANA	SCOULER WILLOW*

SYMPHORICARPOS ALBUS COMMON SNOWBERRY

### EMERGENT WETLAND

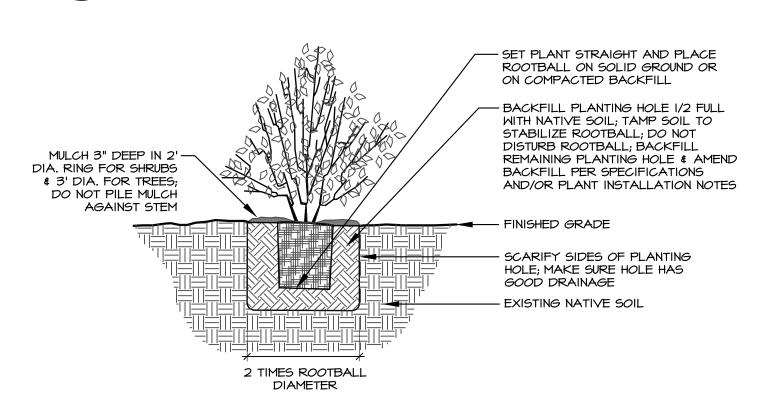
SALIX SITCHENSIS

	SCIENTIFIC NAME	COMMON NAME
	ALOPECURUS GENICULATUS	WATER FOXTAIL
	CAREX OBNUPTA	SLOUGH SEDGE
	ELEOCHARIS PALUSTRIS	COMMON SPIKERUS
	JUNCUS ENSIFOLIUS	DAGGER-LEAVED RUSH
	SCIRPUS CYPERINUS	WOOL GRASS
	SCIRPUS MICROCARPUS	SMALL-FRUITED BULRUSH
	SPARGANIUM EURYCARPUM	BROAD-FRUITED BURREED

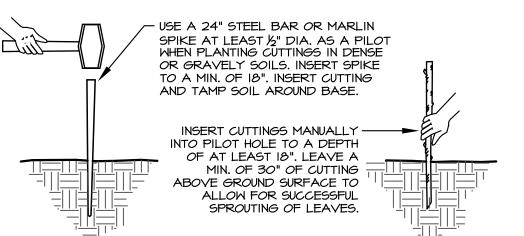
\* TO BE INSTALLED AS CUTTINGS

#### - I STAKE PER TREE LOCATED OUTSIDE OF ROOTBALL. FASTEN W CHAINLOCK TIES. LOOP EACH TIE AROUND TREE LOOSELY TO PROVIDE I" SLACK FOR TRUNK GROWTH, STAKE HEIGHT MUST BE AT LEAST 4' ABOVE FINISHED GRADE. SET TREE STRAIGHT AND PLACE -ROOTBALL ON SOLID GROUND OR ON COMPACTED BACKFILL. - MULCH TREE WITH MULCH RING 3" DEEP x 3' DIA. TO WITHIN 3" OF THE TRUNK - DO NOT MOUND BACKFILL PLANTING HOLE 1/2 FULL -MULCH AGAINST TRUNK WITH NATIVE SOIL AND TAMP SOIL TO STABILIZE ROOTBALL. CUT AWAY WIRE, STRING, AND BURLAP FORM TEMPORARY 5" HIGH AND BACKFILL REMAINING SOIL DAM AROUND TREE TO PLANTING HOLE. AMEND BACKFILL HOLD WATER. AS NOTED IN THE PLANTING SPECIFICATIONS AND/OR - FINISHED GRADE INSTALLATION NOTES. -EXCAVATE HOLE 2 TIMES WIDER THAN ROOTBALL. SCARIFY SIDES OF PLANTING HOLE. MAKE SURE HOLE HAS GOOD DRAINAGE 2 TIMES ROOTBALL DIA.

# B&B TREE PLANTING DETAIL



# 2 CONTAINER STOCK PLANTING DETAIL N.T.S.



I. CUTTINGS SHALL BE SPECIES AS NOTED IN

- THE PLANT SCHEDULE. 2. CUTTINGS SHALL BE AT LEAST I/2" IN DIA. AND 4' IN LENGTH.
- 3. CUTTINGS MUST BE MADE FROM LIVE AND VIGOROUS WOODY MATERIAL WITH SIDE BRANCHES REMOVED AND BARK INTACT. 4. THE BUTT ENDS SHALL BE CLEANLY CUT AT AN ANGLE FOR EASY INSERTION INTO
- 5. THE TOP SHALL BE CUT SQUARE OR BLUNT 6. CUTTINGS SHALL BE PLANTED WITHIN 24 HOURS OF CUTTING AND MUST BE KEPT
- MOIST AT ALL TIMES PRIOR TO PLANTING. 7. BOTTOM OF CUTTINGS SHALL BE TREATED WITH ROOTING HORMONE PRIOR TO

# (3) CUTTING INSTALLATION DETAIL

## GENERAL PLANT INSTALLATION NOTES

- I. PLANT TREES AND/OR SHRUBS I" HIGHER THAN DEPTH GROWN AT NURSERY
- 2. FOR CONTAINER TREES AND/OR SHRUBS, SCORE FOUR SIDES OF ROOTBALL PRIOR TO PLANTING. BUTTERFLY ROOTBALL IF ROOT CIRCLING IS EVIDENT.
- 3. STAKE DECIDUOUS AND EVERGREEN TREES 4 FEET AND OVER IN HEIGHT WITH ONE (I) STAKE PER TREE. STAKE TREES IMMEDIATELY AFTER PLANTING. PLACE STAKE AT THE OUTER EDGE OF THE ROOTS OR ROOTBALL, IN LINE WITH THE PREVAILING WIND. STAKES SHALL BE LOOSELY ATTACHED USING CHAIN-LOCK TREE TIES TO ALLOW FOR SOME TRUNK MOVEMENT.
- 4. TREE STAKES TO BE VERTICAL, PARALLEL, EVEN-TOPPED, UNSCARRED AND DRIVEN INTO UNDISTURBED SUBGRADE. REMOVE AFTER ONE YEAR.
- 5. WATER PLANTS IMMEDIATELY UPON PLANTING, THEN PROVIDE MANUAL WATERING OR A TEMPORARY IRRIGATION SYSTEM (IF SPECIFIED IN THE PLANTING SPECIFICATIONS) TO PREVENT PLANT MORTALITY AND ENSURE PROPER PLANT ESTABLISHMENT. PLANTS SHALL RECEIVE A MINIMUM OF APPROXIMATELY ONE INCH OF WATER EVERY WEEK DURING THE DRY SEASON (GENERALLY JUNE 15TH - OCTOBER 15TH, OR EARLIER OR LATER IF CONDITIONS WARRANT) FOR THE FIRST SEASON AFTER PLANTING. IRRIGATION AMOUNTS MAY NEED TO BE INCREASED DURING PROLONGED PERIODS OF HOT, DRY WEATHER.
- 6. FERTILIZE ALL TREES AND SHRUBS WITH A SLOW-RELEASE GENERAL PURPOSE GRANULAR FERTILIZER OR SLOW-RELEASE TABLETS AT MANUFACTURER'S SPECIFIED

# NOT FOR CONSTRUCTION

THESE PLANS HAVE BEEN SUBMITTED TO THE APPROPRIATE AGENCIES FOR REVIEW AND APPROVAL. UNTIL APPROVED, THESE PLANS ARE: SUBJECT TO REVISION

Know what's below. Call before you dig. SURVEY AND SITE PLAN PROVIDED BY ESM, 33400 8TH AVE S, SUITE 205 FEDERAL WAY, WA 98003, (253) 838-6113.

SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.

THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT AND CONCEPTUAL MITIGATION PLAN PREPARED BY TALASAEA CONSULTANTS IN SEPTEMBER, 2017.

Sheet # **M3.** 

Scale

Drawn

Designed AO

Approved <u>BS</u>

Checked <u>JM/AO</u>

Project # 1572C

© Copyright - Talasaea Consultants, INC.

9-20-201

AS SHOWN

MW