WETLAND DELINEATION AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

HUNT ELEMENTARY SCHOOL ADDITION

FEBRUARY 2017



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FEBRUARY 6, 2017

PROJECT LOCATION

12801 144TH STREET EAST PUYALLUP, WASHINGTON 98374

PREPARED FOR

PUYALLUP SCHOOL DISTRICT 2106 PACIFIC AVENUE, SUITE 300 TACOMA, WASHINGTON 98402

PREPARED BY

Soundview Consultants LLC 2907 Harborview Drive, Suite D GIG Harbor, Washington 98335 (253) 514-8952



Executive Summary

Soundview Consultants LLC (SVC) has been contracted by Puyallup School District (Client) to perform a wetland delineation and fish and wildlife habitat assessment to assist with planning for construction of a classroom addition on the 15.9-acre Warren Hunt Elementary property located in unincorporated Pierce County at 12801 144th Street East in Puyallup, Washington. The subject property is situated in the Southwest ¹/₄ of Section 14, Township 19 North, Range 4 East, W.M. (Pierce County Parcel Number 0419144012).

SVC investigated the subject property for the presence of potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species on December 14, 2016. Using current methodology, the site investigation delineated the boundary of two potentially-regulated offsite Category IV wetlands (Wetlands A and B) located immediately east of the subject property. According to Pierce County Code (PCC) 18E.30.060, these Category IV wetlands are subject to 50-foot buffers based on the surrounding land use intensity.

The proposed project includes the removal of ten existing portable classroom buildings and construction of an approximately 16,000 square-foot addition to provide 12 additional classrooms on the north end of the existing school building. The proposed development will occur outside of the wetland and wetland buffer areas.

The summary table below identifies potential regulatory status of local, State, and Federal agencies.

Wetland Name	Size (Off-site)	Category ^A	Regulated Under PCC Title 18.30	Regulated Under RCW 90.48	Regulated Under Clean Water Act
А	0.32 ac	IV	Yes	Likely	Potentially
В	0.35 ac	IV	Yes	Likely	Potentially

A Washington State Department of Ecology (WSDOE) 2014 wetland rating methods (Hruby, 2014).

Site Map



1415.0003 Hunt Elementary School Addition Wetland Delineation and Habitat Assessment Report

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Soundview Consultants LLC February 6, 2017

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Chapter 1. Introduction

Soundview Consultants LLC (SVC) has been contracted by Puyallup School District (Client) to perform a wetland delineation and fish and wildlife habitat assessment to assist with planning for construction of a classroom addition on the 15.9-acre Warren Hunt Elementary property located in unincorporated Pierce County at 12801 144th Street East in Puyallup, Washington. The subject property is situated in the Southwest ¹/₄ of Section 14, Township 19 North, Range 4 East, W.M. (Pierce County Parcel Number 0419144012).

The purpose of this wetland delineation and fish and wildlife habitat assessment report is to document the presence of potentially-regulated wetlands, fish and wildlife habitat, and/or priority species on or near the subject property; assess potential impacts to any such critical areas and/or species from the proposed project; and provide impact avoidance and management recommendations, as necessary.

This report provides conclusions and recommendations regarding:

- Site description, project description, and area of assessment;
- Identification, delineation, and assessment of potentially-regulated wetlands and aquatic features;
- Identification and assessment of potentially-regulated fish and wildlife habitat and/or priority species located on or near the subject property;
- Standard buffer recommendations, building setbacks, and development limitations;
- Existing site map detailing identified critical areas and standard buffers;
- Proposed site plan with proposed building locations;
- Documentation of impact avoidance measures; and
- Supplemental information necessary for local regulatory review.

Chapter 2. Proposed Project

2.1 Location

The proposed project is located on the 15.9-acre Warren Hunt Elementary property located in unincorporated Pierce County in Puyallup, Washington (Figure 1). The subject property is situated in the Southwest ¹/₄ of Section 14, Township 19 North, Range 4 East, W.M. (Pierce County Parcel Number 0419144012).

To access the site from Interstate 5 South from the Tacoma area, take exit 127 for WA-512 East. Turn left onto WA-512 East and continue east for approximately 8 miles. Take the exit for 9th Street Southwest/94th Avenue East and turn right. Continue south on 94th Avenue East for 2.2 miles. Turn left onto 144th Street East/Hemlock Road for another 2.2 miles. The subject property will be on the left hand side after 127th Avenue East.



Figure 1. Vicinity Map.

2.2 Project Description

The proposed project includes the removal of ten existing portable classroom buildings and construction of an approximately 16,000 square-foot addition to provide 12 additional classrooms on the north end of the existing school building. Existing water and storm utilities in the proposed addition area will be relocated to facilitate the new construction. Additional components of the project include relocating the existing covered play area to provide clearance for a fire lane west of the new addition, and adding pervious pavement to re-establish adequate outdoor play areas. Construction will

include a site development phase that will relocate the existing portables to a temporary location to the southwest of the existing building, outside of any wetlands or other critical areas and their buffers.

Chapter 3. Methods

SVC investigated, delineated, and assessed wetlands, drainages, and other potentially-regulated fish and wildlife habitat within the subject property and identified potentially regulated features within 300 feet of the subject property on December 14, 2016. All wetland determinations were made using observable vegetation, hydrology, and soils in conjunction with data from the U.S. Geographic Survey (USGS) topographic maps, the Natural Resources Conservation Service (NRCS) Soil Survey, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), Pierce County GIS, the Soil Survey of Pierce County (Zulauf, 1979), local precipitation data (NOAA), and various orthophotographic resources. Appendix A contains further details for the methods and tools used to prepare this report.

Wetland boundaries were determined using the routine approach described in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and modified according to the guidelines established in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (USACE, 2010). Qualified wetland scientists marked boundaries of on-site wetlands with orange surveyor's flagging labeled alpha-numerically and tied to 3-foot lath or vegetation along the wetland boundary. Pink surveyor's flagging was labeled alpha-numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected. Additional tests pits were excavated at regular intervals inside and outside of the wetland boundaries to further confirm each delineation.

SVC classified all wetlands using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979) classification systems, and assessed wetlands using the *Wetland Functions* Characterization Tool for Linear Projects (WSDOT, 2000). Following classification and assessment, WSDOE-trained scientists rated and categorized all wetlands using the *Washington State Wetlands Rating* System for Western Washington (Hruby, 2014).

The fish and wildlife habitat assessment was conducted during the same site visits by qualified fish and wildlife biologists. Experienced biologists made visual observations using stationary and walking survey methods for both aquatic and upland habitats noting any special habitat features or signs of fish and wildlife activity.

Chapter 4. Existing Conditions

4.1 Landscape Setting

The subject property is located within Water Resource Inventory Area (WRIA) 10 – Puyallup-White watershed. The subject property abuts a forested parcel with a single-family residence to the east, 144th Street East to the south, residential development to the west (Figure 2), and McMillin Reservoir to the north. The topography on the site is relatively flat throughout, sloping slightly downward to the north. The subject property is currently developed with an elementary school, detached modular classroom units, and associated infrastructure such as parking, play areas, and utilities (e.g., man-made stormwater pond in the northeast corner).



Figure 2. Aerial Photograph of the Subject Property.

Source: Google Maps

4.2 Soils

The NRCS Soil Survey of Pierce County identified one soil series on the site: Kapowsin gravelly loam, 0 to 6 percent slopes. A soil map is provided in Appendix B4.

Kapowsin gravelly loam, 0 to 6 percent slopes (19A)

According to the survey, Kapowsin gravelly loam, 0 to 6 percent slopes, have developed in glacial till under conifers and dominates the Midland-Parkland area in elevation ranges from 300 to 900 feet. In a typical profile, the surface layer is dark brown gravelly loam to a depth of 7 inches. The subsoil, between depths of 7 and 25 inches, is dark brown or dark yellowish brown gravelly loam and brown loam. The substratum, to a depth of more than 60 inches, is mottled olive brown loam and grayish

brown gravelly loam. The substratum is compact glacial till that is cemented in places, particularly in the upper part. Kapowsin gravelly loam, 0 to 6 percent slopes, is listed as hydric on the Pierce County Area Hydric Soils List (NRCS, 2012).

4.3 Vegetation

The areas surrounding the school buildings and parking lots on the subject property are characterized by mowed grass fields. Vegetation in these areas is solely herbaceous and includes colonial bentgrass (*Agrostis capillaris*), hairy cats-ear (*Hypochaeris radicata*), white clover (*Trifolium repens*), and bird's-foot trefoil (*Lotus corniculatus*). The northern areas of the site, including the manmade stormwater pond, are characterized by reed canarygrass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus armeniacus*), and soft rush (*Juncus effusus*).

4.4 Priority Habitats and Species

The USFWS NWI map (Appendix B1) identifies a freshwater pond north of the subject property, which is the McMillin Reservoir. The Pierce County wetlands and streams map (Appendix B7) identifies the onsite man-made stormwater pond and the McMillin Reservoir within 300 feet of the subject property. The Washington Department of Fish and Wildlife (WDFW) SalmonScape (Appendix B5) and Priority Habitats and Species (PHS) (Appendix B6) maps and data do not identify any priority habitats or species on or adjacent to the subject property.

4.5 Precipitation

Precipitation data was obtained from the NOAA weather station at SeaTac Airport in order to obtain percent of normal precipitation during and preceding the investigations. A summary of data collected is provided in Table 1.

Date	Day of	Day Before	1 Week Prior	2 Weeks Prior	Month To Date (Observed/Normal) ²	Year to Date (Observed/Normal) ²	Percent of Normal (month/year) ³
12/14/2016	0.00	0.00	1.73	0.76	1.63/2.54	17.91/12.59	64/142

Table 1. Precipitation Summary¹

¹ Precipitation volume provided in inches. Data obtained from NOAA (http://www.weather.gov/climate/index.php?wfo=sew) for SeaTac Airport).

² Month-to-date and year-to-date precipitation shown is from the first of the month to the date of the site visit, and from October 1st to the date of the site visit.

 $^{3.}\,$ Percent of normal shown is for the month/year.

During the December site visit, month-to-date precipitation amounts were below statistical normal at 64 percent, with year-to-date precipitation at 142 percent above normal levels. This precipitation data suggests that significantly high precipitation year-to-date may have caused some areas not normally wet to become saturated and/or inundated at the time of the site investigations. Such conditions were considered in making professional wetland boundary determinations.

Chapter 5. Results

5.1 Wetlands

5.1.1 Overview

The site investigation identified two potentially-regulated off-site wetlands adjacent to the subject property (Wetlands A and B). The identified wetlands contained indicators of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation according to current wetland delineation methodology. Wetland data forms are provided in Appendix D, and wetland rating forms are provided in Appendix E. In addition, McMillin Reservoir was identified approximately 200 feet northeast of the subject property. Table 2 summarizes the off-site wetlands identified near the subject property.

			· –	•		
	Pre	Wetland				
Wetland	Cowardin ^A	HGM ^B	WSDOEC	Pierce County ^D	Size (acres)	
Α	PFOE	Depressional	IV	IV	0.32 (offsite)	
В	PSS/EME	Depressional	IV	IV	0.35	

Table 2. Off-Site Wetlands Adjacent to the Subject Property.

Notes:

A. Cowardin et al. (1979) or National Wetland Inventory (NWI) Class based on vegetation: PEM = Palustrine Emergent; PSS = Palustrine Scrub-Shrub; PFO = Palustrine Forested; Modifiers (-A, -B, -E, et cetera) = Water Regime or Special Situations

B. Brinson, M. M. (1993).

C. WSDOE rating according to Washington State Wetland Rating System for Western Washington (Hruby, 2014).

D. PCC Title 18E.30.020 definition.

E. PCC Title 18E.30.060 buffer standards.

Wetland A

The off-site Wetland A is approximately 13,743 square feet (0.32 acre) in size, and is located on the west side of the abutting property to the east. Hydrology for Wetland A is provided by surface sheet flow, direct precipitation, and a seasonally-high groundwater table. Wetland vegetation is dominated by black cottonwood, red alder, and slough sedge. Wetland A is a Palustrine Forested, Seasonally Flooded and Saturated depressional wetland. Under PCC 18E.30.020, Wetland A is a Category IV wetland. Table 3 summarizes Wetland A.

Wetland B

The off-site Wetland B is 15,225 square feet (0.35 acre) in size, and is located in the northwestern corner of the abutting property to the east. Hydrology for Wetland B is provided by surface sheet flow, direct precipitation, and a seasonally-high groundwater table, as well as excess runoff from an off-site non-wetland drainage ditch that originates south of Wetland B. Wetland vegetation is dominated by red alder, Scouler's willow, salmonberry, vine maple, and reed canarygrass. Wetland A is a Palustrine Scrub-shrub / Emergent, Seasonally Flooded depressional wetland. Under PCC 18E.30.020, Wetland B is a Category IV wetland. Table 4 summarizes Wetland B.

Buffer Width (feet)^E

50

50

(offsite)

WETLAND A – INFORMATION SUMMARY					
Location:	Located off-site along the western b	oundary of the abutting prop	perty to the east of the		
	subject property.	I and Invitation	Diana County		
at the for	TT SALE LU	WRIA	10 – Puvallup		
		WSDOE Rating	10 – 1 uyanup		
		(Hruby, 2014)	IV		
1 Really	A PROFESSION	Pierce County Rating	IV		
		Pierce County Buffer	50 foot		
IN A STATE		Width	50 leet		
		Wetland Size	13,743 square feet		
	THE AND	wettand Size	(off-site)		
	Contraction of the second	Cowardin Classification	PFOE		
23 3/2	A CONTRACT	HGM Classification	Depressional		
Me		Wetland Data Sheet(s)	DP-13		
		Upland Data Sheet (s)	DP-2		
1230 -75		Boundary Flag color	Orange		
Dominant Vegetation	Wetland A is dominated by black co	ttonwood, red alder, and slow	ıgh sedge.		
Soils	Soils within the wetland were observed as a black $(7.5YR 2.5/1)$ silt loam in the upper layer with a greyish brown $(5Y 5/2)$ depleted gravelly loamy sand with prominent brown $(7.5YR 4/4)$ redoximorphic features in the lower layer.				
Hydrology	Hydrology for Wetland A is provided by surface sheet flow, direct precipitation, and a seasonally-high groundwater table.				
Rationale for	Wetland boundaries were determined	d by topographic drop and a t	ransition to hydrophytic		
Delineation	plant community.				
Local Rating	Local rating is based upon WSDOE's current rating system and PCC Title 18E.30.020.				
Wetland Functions Summary					
Water Quality	Wetland A has a moderate potential to retain sediments and pollutants from surface runoff due to the wetland having seasonal ponding and persistent, ungrazed plants that exist in greater than half the area of the wetland. However, due to the small size of the unit, Wetland A has modest water quality improvement potential. Wetland A's score for Water Quality Functions using the 2014 method is moderate (7).				
Hydrologic	Wetland A provides moderate hydrologic functions due to a storage depth of 0.5 to 2 feet, which supports longer retention time. However, this wetland has a large contributing basin compared to its small size. Wetland A's score for Hydrologic Functions using the 2014 method is moderate (5).				
Habitat	Wildlife habitat functions provided by the wetland may include small mammal forage and cover, small bird forage and nesting, and potential amphibian habitat. Wetland A has a forested Cowardin classification with 3 out of the 5 strata. However this wetland has a low accessible habitat potential. Wetland A's score for Habitat Functions using the 2014 method is very low (3).				
Butter Condition	and salal.	is dominated by Himalayan	blackberry, sword tern,		

Table 3. Wetland A Summary.

WETLAND B – INFORMATION SUMMARY					
Location	Located off-site in the northwestern	corner of the abutting prope	erty to the east of		
Location	subject property.				
		Local Jurisdiction	Pierce County		
		WRIA	10 – Puyallup		
		WSDOE Rating (Hruby, 2014)	IV		
	AND THE	Pierce County Rating	IV		
		Pierce County Buffer Width	50 feet		
		Wetland Size	15,225 square feet (off-site)		
AL OPPAN		Cowardin Classification	PSS/EMC		
		HGM Classification	Depressional		
		Wetland Data Sheet(s)	DP-14		
		Upland Data Sheet (s)	DP-11		
		Boundary Flag color	Orange		
Dominant	Wetland B is dominated by red alder	r saplings, Scouler's willow, sa	almonberry, vine maple,		
Vegetation	and reed canarygrass.				
Soils	Soils within the wetland were observed to have a black (10YR 2/1) sandy loam texture in the upper layer, with a depleted dark greyish brown (10YR 4/2) gravelly sandy loam soil with prominent dark yellowish brown (10YR 3/6) and yellow (10YR 7/4) redoximorphic				
Hydrology	Hydrology for Wetland B is provided by surface sheet flow, direct precipitation, and a seasonally-high groundwater table, as well as excess runoff from an adjacent offsite drainage feature to the porth/northwest				
Rationale for	Wetland boundaries were determined	d by topographic drop and a tr	ransition to hydrophytic		
Delineation	plant community.		J 1 J		
Rationale for	Local rating is based upon WSDOE's surroat rating system and DCC Title 19E 20.020				
Local Rating	Local rating is based upon wSDOE's current rating system and PCC 1itie 18E.30.020.				
	Wetland Functio	ons Summary	allutanta fuora avufago		
Water Quality	wetland B has a moderate potential to retain sediments and pollutants from surface runoff due to the wetland having seasonal ponding and persistent, ungrazed plants that in greater than half the area of the wetland. However, due to the small size of the unit, it has modest water quality improvement potential. Wetland B's score for Water Quality Functions using the 2014 method is moderate (7).				
Hydrologic	Wetland B provides moderate hydrologic functions due to a storage depth of 0.5 to 2 feet, which supports longer retention time to support high flows associated with an adjacent drainage ditch. This wetland also receives stormwater flows and has a contributing basin that is encumbered by more than 25% high intensity land uses. Wetland B's score for Hydrologic Functions using the 2014 method is moderate (5).				
Habitat	Wildlife habitat functions provided by the wetland may include area for amphibians, small mammal forage and cover, small bird forage and nesting. Wetland B has two Cowardin classifications and two hydroperiods, but low accessible habitat capabilities. Wetland B's score for Habitat Functions using the 2014 method is very low (3).				
Buffer	The buffer surrounding Wetland B is dominated by cascara, cherry, white pine, salal,				
Condition	bracken fern, Himalayan blackberry, reed canarygrass, and trailing blackberry.				

Table 4. Wetland B Summary.

5.1.2 Wetland Buffers

Wetlands A and B are Category IV wetlands under PCC 18E.30.020. Per PCC 18E.30.060, Category IV wetlands are subject to 25-foot base buffer widths. However, as the proposed project meets the criteria of high impact land uses under PCC 18E.30.060.A, buffer widths must be increased per PCC 18E.30.070 Table 1. As a result, the off-site Wetlands A and B are subject to 50-foot buffers. In addition, buildings and other structures require a 15-foot buffer setback from the regulated wetland buffer edge (PCC 18E.10.080.H).

5.1.3 Wetland Functions

Using the rapid assessment method (WSDOT, 2000), the wetlands adjacent to the subject property may provide several water quality and hydrologic functions, such as sediment and toxic removal, limited stormwater retention and infiltration, water quality enhancement, and habitat for wildlife. However, these functions are limited by vegetative cover and habitat diversity, wetland size, and the position of the wetlands within the landscape.

Wetlands A and B provide a moderate degree of water quality and hydrologic functions as they both provide seasonal ponding greater than a quarter of the area of the wetland units with a moderate depth of storage to support longer retention time of pollutants. However, the size of the wetlands are relatively small, and their contribution to support flooding in the watershed is relatively low.

Wetland A supports the production and export of organic matter due to its significant emergent community of slough sedge and also provides potential habitat for amphibians and aquatic invertebrates.

Wetland B also supports the production and export of organic matter due to its significant emergent community of reed canarygrass and salmonberry. This wetland also provides the potential habitat for aquatic invertebrates and amphibians and provides overall general habitat suitability due to its multiple hydroperiods and multiple Cowardin classifications.

Neither of the off-site wetlands are likely to provide any function of educational value, uniqueness, or heritage to the best of our professional judgement.

Exection / ValueA	Wetl	and
Function / Value.	Α	В
Water Quality Functions		
Sediment Removal	Х	Х
Nutrient and Toxicant Removal	х	х
Hydrologic Functions		
Flood Flow Alteration	Х	Х
Erosion Control & Shoreline Stabilization	-	-
Habitat Functions		
Production & Export of Organic Matter	х	х
General Habitat Suitability	-	Х
Habitat for Aquatic Invertebrates	Х	X
Habitat for Amphibians	х	х
Habitat for Wetland-Associated Mammals	-	-
Habitat for Wetland-Associated Birds	-	-
General Fish Habitat	-	-
Native Plant Richness	-	-
Special Characteristics		
Educational or Scientific Value	-	-
Uniqueness and Heritage	-	-

Table 4. Functions and Values of Existing Wetlands.

A "-" means that the function is not present; "x" means that the function is present and is of lower quality; and "+" means the function is present and is of higher quality.

5.2 Drainages

The site investigation identified an offsite non-wetland drainage ditch located east and north of the subject property. This artificial drainage is not a naturally-occuring stream and is not likely regulated as a stream or fish and wildlife habitat conservation area under PCC 18E.40. This ditch, which flows through the off-site Wetland B, does not exhibit a defined bed or bank, and no indications of a hyporheic zone or other indicators consistent with a naturally occuring stream were observed

Chapter 6. Regulatory Considerations and Recommendations

The results of the December 2016 site investigation identified two off-site Category IV wetlands (Wetlands A and B) just east of the subject property on Pierce County Parcel 0419144043. No other potentially-regulated wetlands, waterbodies, or fish and wildlife habitat were identified on or near the subject property. The on-site stormwater pond was artificially constructed and, therefore, is not likely considered a regulated critical area.

6.1 Local Requirements

Pierce County has adopted the current wetland rating system used by WSDOE. Category IV wetlands generally provide low levels of function; they are typically more disturbed, smaller, and/or more isolated in the landscape than Category I, II, or III wetlands. Category IV wetlands provide low levels of functions and score less than 16 out of 27 points on the *Revised Washington State Wetland Rating System for Western Washington* (Hruby, 2014).

Wetland Buffer Requirements

Wetlands were assessed and buffer widths were established using the regulations set forth in PCC 18E.30.020 and 18E.30.060. The off-site Wetlands A and B are Category IV depressional wetlands which require standard 50-foot buffers due to the high intensity land use associated with the institutional operations at the Hunt Elementary site. The proposed project elements are located outside of any regulated wetlands and buffers; therefore, no direct impacts to wetlands or wetland buffers are proposed.

According to PCC 18E.20.030 (Exemptions), the placement of access roads, utility lines, and utility poles are allowed across a Category IV wetland and/or a buffer for a Category IV wetland if there is no reasonable alternative. Such actions are considered exempt from PCC Title 18, Development Regulations – Critical Areas.

Building Setback Requirements

Per PCC 18E.10.080.H, an additional 15-foot building setback area is required from the regulated wetland buffer edges of Wetlands A and B. The following uses and activities may be allowed in the building setback area (PCC 18E.10.080.H.2):

- a. Landscaping;
- b. Uncovered decks;
- c. Building overhangs if such overhangs do not extend more than 18 inches into the setback area;
- d. Impervious ground surfaces, such as driveways, parking lots, roads, and patios, provided that such improvements conform to the water quality standards set forth in Title 17A PCC and that construction equipment does not enter the buffer during the construction process; and

e. Clearing and grading.

6.2 State and Federal Considerations

The off-site Wetlands A and B have potential surface and/or subsurface connections to waters of the United States, and as such are potentially regulated under Section 404 of the Clean Water Act by the USACE. As there are no actions proposed to directly impact the off-site wetlands or any other potentially-regulated waterbody, the proposed project will not require coordination with state or federal agencies.

Chapter 7. Closure

The findings and conclusions documented in this assessment report have been prepared for specific application for the Hunt Elementary School Addition project. These findings and conclusions have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. The conclusions and recommendations presented in this assessment report are professional opinions based on an interpretation of information currently available to us and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this assessment may need to be revised wholly or in part in the future.

Wetland status and boundaries identified by SVC are based on conditions present at the time of the site visit and considered preliminary until the flagged wetland boundaries are validated by the jurisdictional agencies. Validation of the wetland boundaries and jurisdictional status of such features by the regulatory agencies provides a certification, usually written, that the wetland determination and boundaries verified are the units that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulatory agencies can provide this certification.

As wetlands and waterbodies are dynamic communities affected by both natural and human activities, changes in boundaries may be expected; therefore, delineations cannot remain valid for an indefinite period of time. Regulatory agencies typically recognize the validity of wetland delineations for a period of five years after completion of an assessment report. Development activities on a site five years after the completion of this assessment report may require reassessment of the wetland delineations. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

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Chapter 8. References

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Appendix A — Methods and Tools

Parameter	Method or Tool	Website	Reference
Wetland Delineation	USACE 1987 Wetland Delineation Manual	http://el.erdc.usace.army.mil/elpu bs/pdf/wlman87.pdf	Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Regional Supplement to the Core of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)	http://www.usace.army.mil/CEC W/Documents/cecwo/reg/west_ mt_finalsupp.pdf	U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
Wetland Classification	USFWS / Cowardin Classification System	https://www.fws.gov/wetlands/do cuments/Classification-of- Wetlands-and-Deepwater- Habitats-of-the-United-States- 2013.pdf	Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
	Hydrogeomorphic Classification (HGM) System	http://el.erdc.usace.army.mil/wetla nds/pdfs/wrpde4.pdf	Brinson, M. M. (1993). "A hydrogeomorphic classification for wetlands," Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
Wetland Rating	Washington State Wetland Rating System	https://fortress.wa.gov/ecy/public ations/documents/1406029.pdf	Hruby, T. (2014). Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.
	Pierce County Code	http://www.codepublishing.com/ WA/PierceCounty/#l/PierceCoun ty18E/PierceCounty18E30.html#1 8E.30.020	Most current western Washington wetland rating system adopted per Pierce County Code Title 18E.30.
Wetland Indicator Status	2014 National Wetland Plant List	<u>http://wetland_plants.usace.army.</u> <u>mil/</u>	Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.
Plant Names	USDA Plant Database	http://plants.usda.gov/	Website
Soils Data	NRCS Soil Survey	http://websoilsurvey.nrcs.usda.gov /app/WebSoilSurvey.aspx	Website GIS data based upon: Zulauf, Allen S., Miles L. Raver, Alfonso DeBose, and Jonathan F. Edwards. 1979. Soil Survey of Pierce County Area, Washington. Soil Conservation Service United States Department of Agriculture, Soil Conservation Service, in cooperation with the Washington Agricultural Experiment Station. Natural Resource Conservation Service.
Hydric Soils Data	Pierce County Hydric Soils List	http://www.wa.nrcs.usda.gov/tech nical/soils/hydric_lists/hydsoil-wa- 653.pdf	Natural Resources Conservation Service. 1979. Hydric Soils List: Pierce County, Washington. U.S. Department of Agriculture. Washington D.C.
Threatened and Endangered Species	Washington Natural Heritage Program	http://www.dnr.wa.gov/nhp/ and http://www1.dnr.wa.gov/nhp/ref desk/datasearch/wnhpwetlands.pd f	Washington Natural Heritage Program (Data published 10/15/08). Endangered, threatened, and sensitive plants of Washington. Washington State Department of Natural Resources, Washington Natural Heritage Program, Olympia, WA
	Washington Priority Habitats and Species	http://wdfw.wa.gov/hab/phspage. htm	Priority Habitats and Species (PHS) Program. Map of priority habitats and species in project vicinity. Washington Department of Fish and Wildlife (WDFW).
	NOAA fisheries species list and maps	http://www.nwr.noaa.gov/ESA- Salmon-Listings/Salmon- Populations/Index.cfm and http://www.nmfs.noaa.gov/pr/sp ecies/	Website

Table A-1.	Methods a	and tools	used to	prepare	the ret	oort.
	methodo t	110 10010	4004 10	prepare	the rep	5010

Parameter	Method or Tool	Website	Reference
	USFWS species lists by County	<u>http://www.fws.gov/westwafwo/s</u> e/SE List/endangered Species.asp	Website
Species of Local Importance	WDFW GIS Data	http://wdfw.wa.gov/mapping/sal monscape/	Website
Report Preparation	Pierce County Code	http://www.codepublishing.com/ WA/PierceCounty/#l/html/Pierc eCounty18E/PierceCounty18E.ht ml	Pierce County Code Title 18.E.

Appendix B — Background Information

This Appendix includes a USFWS NWI Map (B1), Pierce County Tax Parcel Map (B2), Pierce County Topographic Map (B3), NRCS Soil Survey Map (B4), WDFW SalmonScape Map (B5), WDFW PHS Map (B6), and a Pierce County Wetlands and Streams Map (B7).

Appendix B1. USFWS NWI Map



Soundview Consultants LLC February 6, 2017





Appendix B3. Pierce County Topographic Map

1415.0003 Hunt Elementary School Addition Wetland Delineation and Habitat Assessment Report Soundview Consultants LLC February 6, 2017

Appendix B4. NRCS Soil Survey Map



December 5, 2016 NRCS_Soil_Survey 1:4,514 0 0.035 0.07 0.14 mi 0 0.0425 0.085 0.17 km



Appendix B5. WDFW SalmonScape Map

1415.0003 Hunt Elementary School Addition Wetland Delineation and Habitat Assessment Report

Appendix B6. WDFW PHS Map



1415.0003 Hunt Elementary School Addition Wetland Delineation and Habitat Assessment Report

Appendix B7. Pierce County Wetlands and Streams Map



December 5, 2016

Hydro - Centerlines

Supplemental Wetland Inventory



1415.0003 Hunt Elementary School Addition Wetland Delineation and Habitat Assessment Report

0	0.075	1:9,028 0.15	0.3 mi
0	0.075 0.15	0.3 km	

Image countesy of USGS Earthstar Geographics SIO © 2016 Microsoft Corporation © 2010 NAVTEQ © AND

Appendix C — Site Plans

HUNT ELEMENTARY SCHOOL - EXISTING CONDITIONS



HUNT ELEMENTARY SCHOOL - PROPOSED PROJECT



Appendix D — Data Sheets

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

Project/Site: 1415.0003 Hunt Elementary	City/Cou	City/County: Puyallup/Pierce						
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP1					
Investigator(s): Richard Peel, Emily Swaim		Section, Township, Range: <u>14, 19, 4</u>						
Landform (hillslope, terrace, etc.): Valley	Local re	elief (concave, convex, none): <u>None</u>	Slope (%): <u>0</u>					
Subregion (LRR): A2	Lat: <u>47.12578</u>	Long: <u>-122.25916</u>	Datum: WGS84					
Soil Map Unit Name: <u>Kapowsin</u>		NWI classification: N/A						
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?	ed? Are "Normal Circumstances" present? Yes 🛛 No 🗌						
Are Vegetation, Soil, or Hydrology _	naturally problematic?	(If needed, explain any answers	s in Remarks.)					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
Hydrophytic Vegetation Present? Yes [Hydric Soil Present? Yes [Wetland Hydrology Present? Yes [No ⊠ No ⊠ No ⊠ No ⊠ wi	the Sampled Area ithin a Wetland? Yes 🗌	No 🛛					

Remarks: No wetland criteria present.

VEGETATION – Use scientific names of plants.

	Absolute	Dominant Indicator	Dominance Test worksheet:						
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:	(A)				
23		·		Total Number of Dominant Species Across All Strata:	(B)				
4		= Total C	Cover	Percent of Dominant Species That Are OBL, FACW, or FAC:	(A/B)				
1				Prevalence Index worksheet:					
2				Total % Cover of: Multiply by:					
3.				OBL species 0 x 1 =	_				
4.				FACW species <u>0</u> x 2 =	_				
5.		·		FAC species <u>70</u> x 3 = <u>210</u>					
		= Total Cover		FACU species 30 x 4 = 120	-				
Herb Stratum (Plot size: <u>5 ft</u>)				UPL species 0 x 5 =	-				
1. Agrostis capillaris	70	Y	FAC	Column Totals: 100 (A) 330	- (B)				
2. Hypochaeris radicata	30	Y	FACU	(,) <u></u>	_ (=)				
3				Prevalence Index = $B/A = 3.3$					
4.				Hydrophytic Vegetation Indicators:					
5.				Rapid Test for Hydrophytic Vegetation					
6.		·		Dominance Test is >50%					
7.				□ Prevalence Index is ≤3.0 ¹					
8				Morphological Adaptations ¹ (Provide supporti data in Remarks or on a separate sheet)	ng				
9		·		Wetland Non-Vascular Plants ¹					
10				Problematic Hydrophytic Vegetation ¹ (Explain	1)				
11		·		¹ Indicators of hydric soil and wetland hydrology m	., nust				
Woody Vine Stratum (Plot size: <u>30 ft</u>)	<u>100</u>	00 = Total Cover		be present, unless disturbed or problematic.	1031				
1		. <u></u>		Underschutig					
2				Vegetation					
% Bare Ground in Herb Stratum <u>0</u> =		= Total Cover		Present? Yes 🗌 No 🛛					
Remarks: No hydrophytic vegetation criteria observed. Does not meet prevalance index.									
Profile Desc	ription: (Describe	to the dep	oth needed to docu	ument the indica	ator or conf	irm the at	osence of	f indicators.)	
-------------------------	------------------------	-------------	------------------------	-------------------	---------------------------------	---------------	--------------------	------------------------	----------------------------
Depth	Matrix		Red	ox Features					
(inches)	Color (moist)	%	Color (moist)	<u>%</u> Тур	e ¹ Loc ²	Textu	re	Remarks	
		·							<u> </u>
		- <u> </u>							
¹ Type: C=Co	oncentration, D=Dep	bletion, RM	I=Reduced Matrix, C	S=Covered or C	Coated Sand	Grains.	² Locat	tion: PL=Pore Lining	g, M=Matrix.
Hydric Soil	ndicators: (Applic	able to all	I LRRs, unless othe	erwise noted.)		Ir	ndicators	for Problematic H	ydric Soils ³ :
Histosol	(A1)		Sandy Redox ((S5)		Г] 2 cm N	/luck (A10)	-
Histic Ep	ipedon (A2)		Stripped Matrix	(S6)		Ē	_ Red Pa	arent Material (TF2)	
Black His	stic (A3)		Loamy Mucky	Mineral (F1) (ex	cept MLRA	1) [] Very S	hallow Dark Surface	e (TF12)
Hydrogen	n Sulfide (A4)		Loamy Gleyed	Matrix (F2)		Ľ	Other	(Explain in Remarks)
Depleted	Below Dark Surface	e (A11)	Depleted Matri	x (F3)					
Thick Da	rk Surface (A12)		Redox Dark Su	urface (F6)		³	Indicators	of hydrophytic vege	etation and
Sandy M	ucky Mineral (S1)		Depleted Dark	Surface (F7)			wetlanc	d hydrology must be	present,
Sandy G	leyed Matrix (S4)		Redox Depres	sions (F8)			unless	disturbed or problen	natic.
Restrictive I	ayer (if present):								
Туре:									
Depth (ind	ches):					Hydr	ric Soil P	resent? Yes 🗌	No 🖂
Remarks: VI	sual data collected l	n schoolya	ra fiela; no solis san	npiea.					
HYDROLO	GY								
Wetland Hy	drology Indicators:								
Primary India	ators (minimum of o	one require	ed; check all that app	oly)			Second	ary Indicators (2 or i	more required)
☐ Surface \	Vater (A1)		□ Water-Sta	ained Leaves (B) (except M	LRA	□ Wat	er-Stained Leaves (B9) (MLRA 1. 2.
 □ High Wa	ter Table (A2)		1, 2, 4	A. and 4B)			_	4A. and 4B)	-/(, ,
□ Saturatio	n (A3)		□ Salt Crust	t (B11)			🗌 Drai	inage Patterns (B10)	
Water Ma	arks (B1)			vertebrates (B1)	3)			Season Water Tabl	, e (C2)
	t Deposits (B2)			Sulfide Odor (C	:1)		 □	uration Visible on Ae	rial Imagery (C9)
	osits (B3)			Rhizospheres al	ona Livina R	oots (C3)		morphic Position (D	2)
	t or Crust (B4)			of Reduced Iron		2010 (00)		llow Aquitard (D3)	-,
	(B5)			on Reduction in .	Tilled Soile (1	C6)		-Neutral Test (D5)	
	Soil Cracks (B6)			r Stressed Plant	s (D1) (I RP	Δ)		sed Ant Mounde (D6	
	on Visible on Aerial I	magany (B	7) D Other (Ev	n biressed Fiant		A)		st-Heave Hummocks	
	Vegetated Concave	Surface (5)			st-neave nummock	S (D7)
	vegetated concave		80)						
Surface Wet	ar Drecont?		0 Donth (inch	<i>bc)</i> .					
		es ∐ N		50)	-				
vvater Table	Present? Y	res∐ N	o 🖂 🛛 Depth (inche	es):	-				
Saturation Pl	resent? Y	′es ∐ N	o 🖄 🛛 Depth (inche	es):	W	etland Hy	arology l	Present? Yes 🗌	NO 🖂
Describe Re	corded Data (stream	n gauge, m	onitoring well. aerial	l photos, previou	s inspection:	s), if availa	able:		
		J		,, p		,,			
Remarke: No	hydrologic indicate	re obeonio	d						
Nomario. N			·						

Project/Site: 1415.0003 Hunt Elementary	City/County:	Puyallup/Pierce	Sampling Date: <u>12/14/16</u>			
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP2			
Investigator(s): Richard Peel, Emily Swaim	9	Section, Township, Range: <u>14, 1</u>	9, 4			
Landform (hillslope, terrace, etc.): Valley	Local relief	(concave, convex, none): None	Slope (%): <u>0</u>			
Subregion (LRR): <u>A2</u>	Lat: <u>47.12634</u>	Long: <u>-122.25925</u>	Datum: WGS84			
Soil Map Unit Name: Kapowsin		NWI class	ification: N/A			
Are climatic / hydrologic conditions on the site typic	cal for this time of year? Yes 🛛	No 🔲 (If no, explain in Remar	ks.)			
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstances"	present? Yes 🛛 No 🗌			
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes ⊠ Hydric Soil Present? Yes □	No □ Is the No ⊠ within	e Sampled Area				

Wetland Hydrology Present?	Yes 🗌	No 🖾		
Remarks: Only hydrophytic vegetation c	riteria obs	served. This data point lo	cated in ball field. Hydrology like	ly only present due to septic drainfield
location.				

	Absolute	Dominan	t Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover	Species'	<u>?</u> Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4.				· · · · · · · · · · · · · · · · · · ·
		– Total (Cover	Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 15 ft)		- 101010	00001	That Are OBL, FACW, of FAC: <u>66</u> (A/B)
1.				Prevalence Index worksheet:
2.				Total % Cover of: Multiply by:
3				OBL species x 1 =
4		·		FACW species x 2 =
T			·	FAC species x 3 =
J		Total		
Herb Stratum (Plot size: 5 ft)			Jover	
1 Agrostis capillaris	60	Y	FAC	$OPL species \underline{\qquad} x \ 5 = \underline{\qquad} (A) $
2 Hypochaeris radicata	20	v	FACU	Column Totals: (A) (B)
	20	<u> </u>		Prevalence Index = $B/A =$
	20	<u> </u>	FAC	Hydrophytic Vegetation Indicators:
4			· · · · · · · · · · · · · · · · · · ·	
5			·	
6		·		
7		·	·	\square Prevalence Index is $\leq 3.0^{\circ}$
8			·	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9				Wetland Non-Vascular Plants ¹
10			·	Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of bydric soil and wetland bydrology must
	100	= Total C	Cover	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft</u>)				
1			. <u> </u>	Hydrophytic
2				Vegetation
% Para Cround in Harb Stratum 0		= Total 0	Cover	Present? Yes 🛛 No 🗌
Pemarks: Hydrophytic vegetation criteria observed				
Nemarka. Hydrophylic vegetallon chiena observed.				

Profile Description: (Descri	be to the o	depth n	eeded to docur	nent the i	ndicator	or confir	m the ab	sence	of indica	itors.)		
Depth Matrix	(Redo	x Features								
(inches) Color (moist)	%	Colo	or (moist)	%	Type ¹	Loc ²	Textu	re		Rem	arks	
					<u> </u>							
									· · · ·			
¹ Type: C=Concentration, D=D	epletion, I	RM=Rec	luced Matrix, CS	S=Covered	or Coate	ed Sand G	irains.	² Loc	ation: Pl	_=Pore L	ining, M=Matrix.	
Hydric Soil Indicators: (App	licable to		s, unless othe	rwise note	d.)		Ir	ndicato	rs for Pr	oblemat	ic Hydric Soils':	
Histosol (A1)			Sandy Redox (S	S5)] 2 cm	Muck (A	10)		
Histic Epipedon (A2)			Stripped Matrix	(S6)				Red	Parent M	aterial (FF2)	
Black Histic (A3)			Loamy Mucky M	lineral (F1)	(except	MLRA 1)		_ Very	Shallow	Dark Su	rface (TF12)	
Hydrogen Sulfide (A4)	<i></i>		Loamy Gleyed N	Matrix (F2)			L] Othe	r (Explair	n in Rem	arks)	
Depleted Below Dark Surf	ace (A11)		Depleted Matrix	(F3)			2.					
☐ Thick Dark Surface (A12)			Redox Dark Sur	face (F6)			3	ndicato	rs of hydi	rophytic	vegetation and	
Sandy Mucky Mineral (S1)			Depleted Dark S	Surface (F /)			wetla	nd hydrol	ogy mus	t be present,	
Sandy Gleyed Matrix (S4)			Redox Depress	ons (F8)				unles	s disturbe	ed or pro	blematic.	
Restrictive Layer (if present)):											
Type:			-									
Depth (inches):			-				Hydr	ic Soil	Present	? Yes	🗌 No 🖂	
		and Cal										
Remarks: Visual data collected	d in school	yard fiel	ld; no soils samj	oled.								
Remarks: Visual data collected	d in school	yard fiel	id; no soils samj	oled.								
Remarks: Visual data collected	d in school	yard fiel	id; no soiis samį	oled.								
Remarks: Visual data collecter	d in school	yard fiel	id; no soiis samį	oled.								
Remarks: Visual data collecter	d in school		id; no soils samj	bled.								
Remarks: Visual data collecter	d in school	yard fiel	id; no soils samj	bled.								
Remarks: Visual data collecter HYDROLOGY Wetland Hydrology Indicato	d in school		id; no soiis samj	bled.								
Remarks: Visual data collecter HYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum o	rs:	ired; ch	eck all that appl	y)				Secor	dary Indi	cators (2	2 or more required))
Remarks: Visual data collecter HYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum contents)	rs: of one requ	ired; ch	eck all that appl	y)	s (B9) (e	xcept ML		Secor	dary Indi	cators (2	2 or more required)	2.
Remarks: Visual data collecter HYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2)	d in school	ired; ch	eck all that appl	y) ned Leave	s (B9) (e	xcept ML	RA	Secon	idary Indi ater-Stair	cators (2 ned Leav	2 or more required) res (B9) (MLRA 1,	2,
Remarks: Visual data collecter HYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3)	rs: of one requ	ired; ch	eck all that appl	y) ned Leave A, and 4B)	s (B9) (e	xcept ML	RA	Secor	idary Indi ater-Stair 4A, anc	cators (2 ned Leav I 4B)	2 or more required) res (B9) (MLRA 1, B10)	2,
Remarks: Visual data collecter HYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marke (B1)	d in school	ired; ch	eck all that appl Water-Stai 1, 2, 44 Salt Crust	y) ned Leave A, and 4B) (B11)	s (B9) (e	xcept ML	RA	Secor	idary Indi ater-Stair 4A, anc ainage P	cators (2 ned Leav I 4B) atterns (<u>2 or more required)</u> /es (B9) (MLRA 1, B10) Tabla (C2)) 2,
Remarks: Visual data collected HYDROLOGY Wetland Hydrology Indicatoo Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Conditionent (D2)	rs:	ired; ch	eck all that appl by the sector of the secto	y) ned Leave A, and 4B) (B11) rertebrates	s (B9) (e (B13)	xcept ML	RA	Secor	idary Indi ater-Stair 4A, anc ainage P y-Seasor	cators (2 ned Leav I 4B) atterns (n Water 1	<u>2 or more required)</u> /es (B9) (MLRA 1, B10) Table (C2)) 2,
Remarks: Visual data collected HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	rs:	ired; ch	eck all that appl by the sector of the secto	y) ned Leave A, and 4B) (B11) rertebrates Sulfide Odd	s (B9) (e (B13) or (C1)	xcept ML	RA	Secor	idary Indi ater-Stair 4A, anc ainage P y-Seasor ituration \	<u>cators (2</u> ned Leav I 4B) atterns (n Water ' Visible o	2 or more required) /es (B9) (MLRA 1, B10) Table (C2) n Aerial Imagery (0) 2, C9)
Remarks: Visual data collected HYDROLOGY Wetland Hydrology Indicator Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	d in school	ired; ch	eck all that appl Water-Stai 1, 2, 44 Salt Crust Aquatic Inv Hydrogen S Oxidized R	y) ned Leave A, and 4B) (B11) vertebrates Sulfide Odd hizosphere	s (B9) (e (B13) or (C1) es along	xcept ML	RA bts (C3)	Secor W Dr Dr Sa G	dary Indi ater-Stair 4A, anc ainage P y-Seasor ituration ¹ ecomorphi	cators (2 ned Leav I 4B) atterns (n Water Visible o c Positic	2 or more required) /es (B9) (MLRA 1, B10) Table (C2) n Aerial Imagery ((n (D2)) 2, C9)
Remarks: Visual data collected HYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	d in school	ired; ch	eck all that appl Water-Stai 1, 2, 44 Salt Crust Aquatic Inv Hydrogen S Oxidized R	y) ned Leave A, and 4B) (B11) rertebrates Sulfide Odd hizosphere	s (B9) (e (B13) or (C1) es along I Iron (C4	xcept ML	RA Dots (C3)	Secor W Dr Dr Sa Ge St	idary Indi ater-Stair 4A, anc ainage P y-Seasor aturation ¹ comorphi aallow Aq	cators (2 ned Leav I 4B) atterns (Water ¹ Visible o c Positic uitard (E	2 or more required) ves (B9) (MLRA 1, B10) Table (C2) n Aerial Imagery ((n (D2) 03)) 2 , C9)
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Project/Site: 1415.0003 Hunt Elementary	City/C	County: Puyallup/Pierce	Sampling Date: <u>12/14/16</u>			
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP3			
Investigator(s): Richard Peel, Emily Swaim		Section, Township, Range: <u>14, ^</u>	19, 4			
Landform (hillslope, terrace, etc.): Valley	Loca	al relief (concave, convex, none): <u>None</u>	<u>s</u> Slope (%): <u>0</u>			
Subregion (LRR): <u>A2</u>	Lat: <u>47.12767</u>	Long: <u>-122.25897</u>	Datum: WGS84			
Soil Map Unit Name: <u>Kapowsin</u>		NWI clas	sification: <u>N/A</u>			
Are climatic / hydrologic conditions on the site	typical for this time of year? Y	es 🛛 🛛 No 🗌 (If no, explain in Rema	ırks.)			
Are Vegetation, Soil, or Hydrolo	gy significantly disturbed	d? Are "Normal Circumstances'	' present? Yes 🛛 No 🗌			
Are Vegetation, Soil, or Hydrolo	gy naturally problematic	_ 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? Ye Hydric Soil Present? Ye Wetland Hydrology Present? Ye	>s ⊠ No □ >s □ No ⊠ es □ No ⊠	Is the Sampled Area within a Wetland? Yes [] No 🛛			

Remarks: Only hydrophytic vegetation criteria observed.

	Absolute	Dominan	t Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2				Total Number of Dominant	
3				Species Across All Strata: <u>2</u> (B)	
4				Demont of Demission (Demoise	
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)		= Total C	Cover	That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3.				OBL species x 1 =	
4.		· <u></u>		FACW species x 2 =	
5.				FAC species x 3 =	
		= Total (Cover	FACU species x 4 =	
Herb Stratum (Plot size: <u>5 ft</u>)		, otar e		UPL species x 5 =	
1. Agrostis capillaris	70	Y	FAC	Column Totals: (A) (B)	
2. Trifolium repens	20	Y	FAC		
3. Hypochaeris radicata	10	N	FACU	Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5.				Rapid Test for Hydrophytic Vegetation	
6.				Dominance Test is >50%	
7.		· <u></u>		□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9		·		Wetland Non-Vascular Plants ¹	
10		·		Problematic Hydrophytic Vegetation ¹ (Explain)	
11				¹ Indicators of hydric soil and wetland hydrology must	
Woody Vine Stratum (Plot size: <u>30 ft</u>)	<u>100</u>	= Total C	Cover	be present, unless disturbed or problematic.	
1				Hadaaa ka da	
2				Vegetation	
% Bare Ground in Herb Stratum <u>0</u>		= Total C	Cover	Present? Yes 🛛 No 🗌	
Remarks: Hydrophytic vegetation criteria observed.					

i ionie Description. (Describe to the de	put needed to document the indicator of conin	
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
	A Deduced Matrix CC Covered or Costed Cond	Oraina 21 agestions DL Dava Lining M Matrix
Type: C=Concentration, D=Depletion, RN	I=Reduced Matrix, CS=Covered or Coated Sand	Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soli Indicators: (Applicable to al		Indicators for Problematic Hydric Solis":
Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA 1	1) Uery Shallow Dark Surface (TF12)
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)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):		
Туре:		
Depth (inches):		Hydric Soil Present? Ves 🗆 No 🕅
Remarks: Visual data collected in schoolya	ird field; no soils sampled.	
HYDROLOGY		
HYDROLOGY Wetland Hydrology Indicators:		
HYDROLOGY Wetland Hydrology Indicators:	ad: check all that apply)	Secondary Indicators (2 or more required)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require	ed; check all that apply)	Secondary Indicators (2 or more required)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1)	ed; check all that apply)	<u>Secondary Indicators (2 or more required)</u> LRA ☐ Water-Stained Leaves (B9) (MLRA 1, 2,
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2)	ed; check all that apply) Water-Stained Leaves (B9) (except Mil 1, 2, 4A, and 4B)	<u>Secondary Indicators (2 or more required)</u> LRA ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one require Surface Water (A1) High Water Table (A2) Saturation (A3)	ed; check all that apply) Water-Stained Leaves (B9) (except Mil 1, 2, 4A, and 4B) Salt Crust (B11)	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ed; check all that apply) Water-Stained Leaves (B9) (except Miles) 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ed; check all that apply) Water-Stained Leaves (B9) (except M 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ed; check all that apply) Water-Stained Leaves (B9) (except Milesting) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living References	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) oots (C3) Geomorphic Position (D2)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	ed; check all that apply) Water-Stained Leaves (B9) (except Milesting) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iran Deposits (B5)	ad; check all that apply) Water-Stained Leaves (B9) (except Mines 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Red Presence of Reduced Iron (C4) Recent Iron Deduction in Titled Octing	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) EAO Nexter Table (C5)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	ad; check all that apply) Water-Stained Leaves (B9) (except Mines 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Reference of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Saturation Visible on Aerial Imagery (C9) oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	ad; check all that apply) Water-Stained Leaves (B9) (except Mines 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Reference of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Call of Stunted or Stressed Plants (D1) (LRR	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B	ad; check all that apply) Water-Stained Leaves (B9) (except Mines 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Reference of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Calculated or Stressed Plants (D1) (LRR 7) Other (Explain in Remarks)	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface	ad; check all that apply) Water-Stained Leaves (B9) (except Mingle 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Reference of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Call Stunted or Stressed Plants (D1) (LRR 67) Other (Explain in Remarks)	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (E Sparsely Vegetated Concave Surface Field Observations:	ad; check all that apply) Water-Stained Leaves (B9) (except Mingle 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Reference of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (Call Stunted or Stressed Plants (D1) (LRR 97) Other (Explain in Remarks) (B8)	Secondary Indicators (2 or more required) LRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) C6) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
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Project/Site: 1415.0003 Hunt Elementary	City/County: Puya	Illup/Pierce	Sampling Date: <u>12/14/16</u>			
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP4			
Investigator(s): Richard Peel, Emily Swaim	Sectio	n, Township, Range: <u>14, 19, 4</u>	4			
Landform (hillslope, terrace, etc.): Valley	Local relief (con	cave, convex, none): <u>concave</u>	Slope (%): <u>5</u>			
Subregion (LRR): A2	Lat: <u>47.12809</u>	Long: <u>-122.25856</u>	Datum: WGS84			
Soil Map Unit Name: Kapowsin		NWI classific	ation: <u>N/A</u>			
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? Ar	e "Normal Circumstances" pre	esent? Yes 🛛 No 🗌			
Are Vegetation, Soil, or Hydrology	naturally problematic? (If	needed, explain any answers	in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes X	No 🗌 Is the Sam	pled Area				

Hydric Soil Present? Wetland Hydrology Present?	Yes □ No ⊠ Yes ⊠ No □	within a Wetland?	Yes 🔲 No 🖂
Remarks: Hydrophytic vegetation and h observed.	ydrologic indicators observed. Co	oncrete culvert near. Signs of po	nding at 8 inches. Ponding at 3 inches

VEGETATION – Use scientific names of plants.

	Absolute	Dominan	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	% Cover	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4				
		= Total C	Cover	That Are OBL, FACW, or FAC: 100 (A/B)
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)				······································
1				Prevalence Index worksheet:
2				Total % Cover of:Multiply by:
3				OBL species x 1 =
4				FACW species x 2 =
5				FAC species x 3 =
		= Total C	Cover	FACU species x 4 =
Herb Stratum (Plot size: 5 ft)				UPL species x 5 =
1. Carex sp.	<u>50</u>	Y	FAC*	Column Totals: (A) (B)
2. Cornus corniculatus	<u>30</u>	Y	FAC	()
3. Ranunculus repens	10	Ν	FAC	Prevalence Index = B/A =
4. Leucanthemum vulgare	10	N	FACU	Hydrophytic Vegetation Indicators:
5.				Rapid Test for Hydrophytic Vegetation
6.				Dominance Test is >50%
7.				□ Prevalence Index is ≤3.0 ¹
8				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9				Wetland Non-Vascular Plants ¹
10				Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must
Woody Vino Stratum (Plot size: 20 ft)	100	= Total C	Cover	be present, unless disturbed or problematic.
1				
·				Hydrophytic
Z				Vegetation Present2 Ves ⊠ No □
% Bare Ground in Herb Stratum 0		= Iotal C	over	

Remarks: Hydrophytic vegetation criteria observed through dominance test. FAC-FACU vegetation observed. *Listed as facultative for scoring purposes only.

• • • • • •	Co	Deter	
Samp	Diing	Point:	DP4

Profile Des	cription: (Describ	e to the de	pth needed t	o document the	indicator	or confirm	n the abs	sence of indicators.)
Depth	Matrix			Redox Feature	es			
(inches)	Color (moist)	%	Color (mois	t) %	Type ¹	Loc ²	Texture	e Remarks
0-4	<u>10YR 3/2</u>	100					<u>GrSaLo</u>	Very gravel(fill) Gravelly Sandy Loam
4-12	2.5Y 3/3	99	<u>10YR 5/8</u>	1	C/CS	M	Sand	Sand
					_			
¹ Type: C=C	oncentration, D=De	epletion, RN	/I=Reduced M	atrix, CS=Covere	ed or Coat	ed Sand Gr	ains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to a	ll LRRs, unle	ss otherwise no	ted.)		Inc	licators for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy F	Redox (S5)				2 cm Muck (A10)
Histic Ep	pipedon (A2)		Stripped	Matrix (S6)				Red Parent Material (TF2)
Black Hi	stic (A3)			Mucky Mineral (F	1) (excep	t MLRA 1)		Very Shallow Dark Surface (TF12)
	n Suilide (A4) 1 Below Dark Surfa	ce (A11)		d Matrix (F3)	2)			Other (Explain in Remarks)
	ark Surface (A12)	00 (7(11)		Dark Surface (F6)		³ In	dicators of hydrophytic vegetation and
□ Sandy M	lucky Mineral (S1)		Deplete	d Dark Surface (F7)			wetland hydrology must be present,
Sandy G	leyed Matrix (S4)		Redox [Depressions (F8)				unless disturbed or problematic.
Restrictive	Layer (if present):							
Type:	·							
Depth (in	ches):						Hydric	c Soil Present? Yes 🗌 No 🖂
Remarks: So	ome gravel fill mate	rial present						
HYDROLO	GY							
Wetland Hy	drology Indicators	5:						
Primary Indi	<u>cators (minimum of</u>	one requir	ed; check all t	hat apply)				Secondary Indicators (2 or more required)
Surface	Water (A1)		L Wa	ater-Stained Leav	/es (B9) (e	xcept MLR	RA	Water-Stained Leaves (B9) (MLRA 1, 2,
High Wa	iter Table (A2)			1, 2, 4A, and 4E	3)			4A, and 4B)
	on (A3)		∐ Sa	lt Crust (B11)	(D40)			Drainage Patterns (B10)
	arks (B1)			dragan Sulfida O	B(B(3))			Dry-Season Water Table (C2)
				idized Rhizosphe	vuor (CT)		te (C3)	Geomorphic Position (D2)
	at or Crust (B4)			sence of Reduc	ed Iron (C.	1)	13 (00)	Shallow Aquitard (D3)
	(B5)			cent Iron Reduct	ion in Tille	*) d Soils (C6)	FAC-Neutral Test (D5)
	Soil Cracks (B6)			inted or Stressed	l Plants (D	1) (LRR A)	,	Raised Ant Mounds (D6) (LRR A)
Inundation	on Visible on Aerial	Imagery (E	37)	ner (Explain in Re	emarks)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Frost-Heave Hummocks (D7)
Sparsely	Vegetated Concav	ve Surface	(B8)		,			
Field Obser	vations:							
Surface Wat	er Present?	Yes 🛛 🛛 N	lo 🗌 🛛 Depth	(inches): <u>+0.25</u>				
Water Table	Present?	Yes 🛛 🛛	lo 🗌 Depth	(inches): <u>2</u>				
Saturation P	resent?	Yes 🛛 🛛	lo 🗌 Depth	(inches): 2		Wetl	and Hydi	rology Present? Yes 🖂 No 🗌
(includes ca	pillary fringe)		· · · · · · · · · · · · · · · · · · ·			\	-	
Describe Re	corded Data (strea	m gauge, n	ionitoring wel	, aeriai photos, p	revious in	spections),	ir availab	ie:
<u> </u>			L 0.07" (
Remarks: H	yarologic indicators	A1 observ	ed. 0.25" of po	onding observed	at plot.			

Project/Site: 1415.0003 Hunt Elementary	City/C	County: Puyallup/Pierce	Sampling Date: <u>12/14/16</u>				
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP5				
Investigator(s): Richard Peel, Emily Swaim		Section, Township, Range: <u>14, 19, 4</u>					
Landform (hillslope, terrace, etc.): Valley	Loca	al relief (concave, convex, none): <u>concave</u>	e Slope (%): <u>5</u>				
Subregion (LRR): <u>A2</u>	Lat: <u>47.12833</u>	Long: <u>-122.25802</u>	Datum: WGS84				
Soil Map Unit Name: <u>Kapowsin</u>		NWI classifi	cation: <u>N/A</u>				
Are climatic / hydrologic conditions on the site typ	ical for this time of year? Y	es 🛛 🛛 No 🗌 (If no, explain in Remarks	3.)				
Are Vegetation, Soil, or Hydrology _	significantly disturbe	d? Are "Normal Circumstances" pi	resent? Yes 🛛 No 🗌				
Are Vegetation, Soil, or Hydrology _	naturally problematic	turally problematic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS – Attach si	te map showing sam	pling point locations, transect	s, important features, etc.				
Hydrophytic Vegetation Present?Yes IHydric Soil Present?Yes IWetland Hydrology Present?Yes I	3 No □] No ⊠ 3 No □	Is the Sampled Area within a Wetland? Yes	No 🖂				
Remarks: Hydrophytic vegetation and hydrologic	c indicators observed.						

	Absolute	Dominan	Indicator	Dominance Test workshe	eet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species	<u>Status</u>	Number of Dominant Spec That Are OBL, FACW, or F	ies FAC: <u>2</u>	(A)
2				Total Number of Dominant		
3				Species Across All Strata:	2	(B)
4						
		= Total C	Cover	That Are OBL FACW or F	ies FAC· 100	(A/B)
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)					<u></u>	()
1				Prevalence Index worksh	neet:	
2				Total % Cover of:	Multiply by:	
3				OBL species	x 1 =	_
4				FACW species	x 2 =	
5.				FAC species	x 3 =	
		= Total C	Cover	FACU species	x 4 =	
Herb Stratum (Plot size: <u>5 ft</u>)				UPL species	x 5 =	
1. Phalaris arundinacea	50	<u>Y</u>	FACW	Column Totals:	(A)	(B)
2. Rubus armeniacus	20	Y	FAC			_ ()
3. Juncus effusus	10	N	FACW	Prevalence Index =	B/A =	
4				Hydrophytic Vegetation I	ndicators:	
5				Rapid Test for Hydroph	nytic Vegetation	
6.				Dominance Test is >50)%	
7.				☐ Prevalence Index is ≤3	5.0 ¹	
8						
				Morphological Adaptat	ions ¹ (Provide suppor	ting
9				Morphological Adaptat data in Remarks or	ions ¹ (Provide suppor on a separate sheet) Plants ¹	ting
9 10				Morphological Adaptat data in Remarks or Wetland Non-Vascular Problematic Hydrophyd	ions ¹ (Provide suppor on a separate sheet) Plants ¹	ting
9 10 11				Morphological Adaptat data in Remarks or Wetland Non-Vascular Problematic Hydrophyte	ions ¹ (Provide suppor on a separate sheet) Plants ¹ tic Vegetation ¹ (Explai	n)
9 10 11	80		 Cover	Morphological Adaptat data in Remarks or Wetland Non-Vascular Problematic Hydrophyt ¹ Indicators of hydric soil ar be present, unless disturbe	ions ¹ (Provide suppor on a separate sheet) Plants ¹ tic Vegetation ¹ (Explain ad wetland hydrology i ed or problematic.	n) nust
9 10 11 <u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>)	80		Cover	 Morphological Adaptat data in Remarks or Wetland Non-Vascular Problematic Hydrophyl ¹Indicators of hydric soil ar be present, unless disturbe 	ions ¹ (Provide suppor r on a separate sheet) Plants ¹ tic Vegetation ¹ (Explain ad wetland hydrology ed or problematic.	n) nust
9 10 11 <u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>) 1	<u></u>		Cover	Morphological Adaptat data in Remarks or Wetland Non-Vascular Problematic Hydrophyt Indicators of hydric soil ar be present, unless disturbe	ions ¹ (Provide suppor r on a separate sheet) Plants ¹ tic Vegetation ¹ (Explain ad wetland hydrology ed or problematic.	n) nust
9 10 11 <u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>) 1 2	<u></u> <u>80</u>			Morphological Adaptat data in Remarks or Wetland Non-Vascular Problematic Hydrophyt Indicators of hydric soil ar be present, unless disturbe Hydrophytic Vegetation	ions ¹ (Provide suppor r on a separate sheet) Plants ¹ tic Vegetation ¹ (Explain ad wetland hydrology in ed or problematic.	n) must
9 9 10 11 <u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>) 1 2 2	<u></u> 80	= Total (Cover	 Morphological Adaptat data in Remarks or Wetland Non-Vascular Problematic Hydrophyti ¹Indicators of hydric soil ar be present, unless disturbe Hydrophytic Vegetation Present? Yes [2] 	ions ¹ (Provide suppor r on a separate sheet) Plants ¹ tic Vegetation ¹ (Explain ad wetland hydrology in ed or problematic.	n) nust
9 10 11 <u>Woody Vine Stratum</u> (Plot size: <u>30 ft</u>) 1 2 % Bare Ground in Herb Stratum <u>20</u> Remarks: Hydrophytic vegetation criteria observed through	<u>80</u> 	= Total (Cover	Morphological Adaptat data in Remarks or Wetland Non-Vascular Problematic Hydrophyte ¹ Indicators of hydric soil ar be present, unless disturbe Hydrophytic Vegetation Present? Yes [2]	ions ¹ (Provide suppor r on a separate sheet) Plants ¹ tic Vegetation ¹ (Explained wetland hydrology ad or problematic.	n) nust

Sampli	na Po	int: D	P5
Campin	ing i o		

Trenne Bees	cription: (Describe	to the dep	oth needed to docu			n the abse	nce of indicators.)
Depth	Matrix		Redo	ox Features			
(inches)	Color (moist)		Color (moist)	<u>%</u> Тур	e ¹ Loc ²	Texture	<u>Remarks</u>
0-4	<u>7.5YR 3/1</u>	100				SaLo	Sandy loam
4-12	<u>10YR 3/2</u>	99	<u>10YR 3/3</u>	<u>1 C</u>	M	GrSaLo	Gravelly sandy loam; fill material
12-16	10YR 3/2	85	<u>10YR 3/6</u>	<u>15 C/CS</u>	<u>M</u>	SaLo	Sandy loam
·							
¹ Type: C=C	oncentration, D=Dep	pletion, RM	=Reduced Matrix, C	S=Covered or C	oated Sand G	rains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to all	LRRs, unless othe	rwise noted.)		Indi	cators for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox (S5)			2 cm Muck (A10)
Histic Ep	oipedon (A2)		Stripped Matrix	(S6)			Red Parent Material (TF2)
Black Hi	stic (A3)		Loamy Mucky N	Mineral (F1) (exc	ept MLRA 1)	<u> </u>	/ery Shallow Dark Surface (TF12)
Hydroge	n Sulfide (A4)	- (0.4.4)	Loamy Gleyed	Matrix (F2)			Other (Explain in Remarks)
	Below Dark Surface	e (A11)	Depleted Matrix Depleted Matrix	((F3) rface (F6)		³ Indi	cators of hydrophytic vegetation and
	lucky Mineral (S1)			Surface (F7)		inui w	vetland hydrology must be present
Sandy G	ileved Matrix (S4)		Redox Depress	ions (F8)		u	nless disturbed or problematic.
Restrictive	Layer (if present):			. ,			•
Type:							
Depth (in	ches):					Hydric	Soil Present? Yes 🗌 No 🖂
Remarks: No hydric soil indicators observed. Some gravel fill material present.							
HYDROLO	GY						
HYDROLO Wetland Hy	GY drology Indicators:						
HYDROLO Wetland Hy	GY drology Indicators: cators (minimum of d	one require	d; check all that app	ly)		<u>S</u>	econdary Indicators (2 or more required)
HYDROLO Wetland Hy Primary India	GY drology Indicators: cators (minimum of o Water (A1)	: one require	d; check all that app □ Water-Sta	ly) ined Leaves (B9) (except MLF	<u> </u>	econdary Indicators (2 or more required)] Water-Stained Leaves (B9) (MLRA 1, 2,
HYDROLO Wetland Hy Primary India Surface High Wa	GY drology Indicators: cators (minimum of o Water (A1) ter Table (A2)	one require	d: check all that app ☐ Water-Sta 1, 2, 4/	ly) ined Leaves (B9 A, and 4B)) (except MLF	<u> </u>	econdary Indicators (2 or more required)] Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic	GY drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3)	: one require	d <u>; check all that app</u> ☐ Water-Sta 1, 2, 4 . ☐ Salt Crust	l <u>y)</u> ined Leaves (B9 A, and 4B) (B11)) (except MLF	<u>S</u> RA [econdary Indicators (2 or more required)] Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)] Drainage Patterns (B10)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M	GY drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1)	: one require	d: check all that app ☐ Water-Sta 1, 2, 4, ☐ Salt Crust ☐ Aquatic Inv	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13) (except MLF	<u>S</u> RA [econdary Indicators (2 or more required)] Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)] Drainage Patterns (B10)] Dry-Season Water Table (C2)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimer	GY drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2)	: one require	d: check all that app ☐ Water-Sta 1, 2, 4 ☐ Salt Crust ☐ Aquatic In ☐ Hydrogen	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C) (except MLF)) 1)	<u>S</u> A C	econdary Indicators (2 or more required)] Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)] Drainage Patterns (B10)] Dry-Season Water Table (C2)] Saturation Visible on Aerial Imagery (C9)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep	GY drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3)	one require	d; check all that app	l <u>y)</u> ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres alc) (except MLF)) 1) ng Living Roc	<u>S</u> RA [[[[] tts (C3) []	econdary Indicators (2 or more required)] Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)] Drainage Patterns (B10)] Dry-Season Water Table (C2)] Saturation Visible on Aerial Imagery (C9)] Geomorphic Position (D2)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	GY drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) th Deposits (B2) posits (B3) tt or Crust (B4)	: one require	d; check all that app Water-Sta 1, 2, 4, Salt Crust Aquatic Im Hydrogen Oxidized F Presence	l <u>y)</u> ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres alc of Reduced Iron) (except MLF)) 1)))))))) (C4)	S RA [econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) tt or Crust (B4) osits (B5)	: one require	d: check all that app Uater-Sta 1, 2, 4, Salt Crust Aquatic Int Hydrogen Oxidized F Presence Recent Iro	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron n Reduction in 1) (except MLF))))))) (C4) (C4) (C4)	S RA [uts (C3) [uts (C3) [econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	GY drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) it or Crust (B4) osits (B5) Soil Cracks (B6)	: one require	d: check all that app U Water-Sta 1, 2, 4 Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron n Reduction in T Stressed Plants) (except MLF)) 1))ng Living Roc (C4) iilled Soils (C6 5 (D1) (LRR A)	S RA C ots (C3) C c) C	econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) nt or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I	magery (B	d: check all that app Water-Sta 1, 2, 4, Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron in Reduction in T Stressed Plants plain in Remarks) (except MLF)) 1) ong Living Roo (C4) 'illed Soils (C6 ; (D1) (LRR A))	S RA C its (C3) C i) C i) C	econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I of Vegetated Concave	magery (Bi	d: check all that app	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron n Reduction in T Stressed Plants blain in Remarks) (except MLF)))))))) (C4) iilled Soils (C6) (D1) (LRR A))	S RA [econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B3) tt or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations:	magery (B)	d: check all that app Uater-Sta 1, 2, 4, Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp 38)	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron n Reduction in T Stressed Plants blain in Remarks) (except MLF)) I) ing Living Roc (C4) (C4) illed Soils (C6 ; (D1) (LRR A)	S RA [] hts (C3) [] b) []	econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely Field Obser Surface Wat	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) it or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present?	magery (Bi e Surface (I	d: check all that app Water-Sta 1, 2, 4, Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp 38)	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron in Reduction in T Stressed Plants olain in Remarks s): <u>surface</u>) (except MLF)) 1) ong Living Roc (C4) illed Soils (C6 5 (D1) (LRR A))	S RA [econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Surface Sparsely Field Obser Surface Wat	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) arks (B3) tt or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present?	magery (Bi e Surface (I res 🖂 No res 🖾 No	d; check all that app Water-Sta 1, 2, 4, Salt Crust Aquatic Int Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp 38)	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron in Reduction in T Stressed Plants blain in Remarks s): <u>surface</u> s): <u>0</u>) (except MLF)))))) (C4) (Iled Soils (C6 ; (D1) (LRR A))	S RA C its (C3) C i) C i) C	 econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimer Chift Dep Algal Ma Iron Dep Surface Inundatid Sparsely Field Obser Surface Water Table Saturation P (includes cat	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present?	magery (B) e Surface (I /es 🖾 No /es 🖾 No	d: check all that app Water-Sta 1, 2, 4, Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp Bab Depth (inchest Depth (inchest	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron in Reduction in T Stressed Plants blain in Remarks blain in Remarks s): <u>surface</u> s): <u>0</u>) (except MLF))))) (C4)	S RA [econdary Indicators (2 or more required)] Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)] Drainage Patterns (B10)] Dry-Season Water Table (C2)] Saturation Visible on Aerial Imagery (C9)] Geomorphic Position (D2)] Shallow Aquitard (D3)] FAC-Neutral Test (D5)] Raised Ant Mounds (D6) (LRR A)] Frost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wate Water Table Saturation P (includes cal Describe Re	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) nt Deposits (B2) posits (B3) it or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present? Present? pillary fringe) corded Data (stream	magery (B) e Surface (I res \(\text{ Not}\) res \(\text{ Not}\) res \(\text{ Not}\) res \(\text{ Not}\) res \(\text{ Not}\) res \(\text{ Not}\)	d: check all that app Water-Sta 1, 2, 4. Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp Bab Depth (inchest Depth (inchest Depth (inchest Dimentioning well, aerial	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron n Reduction in T Stressed Plants blain in Remarks s): <u>surface</u> s): <u>0</u> photos, previous) (except MLF)) I) ing Living Roc (C4) (C4) (C4) (LRR A)) Wetl s inspections),	A S A C ots (C3) C ots (C3) C C and Hydro	econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Watt Water Table Saturation P (includes cal Describe Re	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present? Present? pillary fringe) corded Data (stream	magery (B) e Surface (I res 🖾 No res 🖾 No res 🖾 No res 🖾 No	d: check all that app Water-Sta 1, 2, 4. Salt Crust Aquatic Im Hydrogen Oxidized F Presence Recent Iro Stunted or T) Other (Exp Bab Depth (inchest Depth (inchest Depth (inchest Depth (inchest	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron in Reduction in T Stressed Plants blain in Remarks s): <u>surface</u> s): <u>o</u> s): <u>0</u> photos, previous) (except MLF))))))) (C4) (C4) (IIIed Soils (C6 (D1) (LRR A)) Wetl s inspections),	A S A C ots (C3) C ots (C3) C and Hydro if available	econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Vater Table Saturation P (includes cal Describe Re	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present? Present? Present? pillary fringe) corded Data (stream	magery (B) e Surface (I res \(\text{ Not}\) res \(\text{ Not}\)	d; check all that app Water-Sta 1, 2, 4, Salt Crust Aquatic Int Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp 38) Depth (inchest Depth (inches	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron in Reduction in T Stressed Plants olain in Remarks s): <u>surface</u> s): <u>0</u> photos, previous) (except MLF)))))) (C4) illed Soils (C6 ; (D1) (LRR A)) Wetl s inspections),	A S A C ots (C3) C ots (C3) C C and Hydro	econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
HYDROLO Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Water Table Saturation P (includes can Describe Re	GY drology Indicators: cators (minimum of of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) tt or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial I v Vegetated Concave vations: er Present? Present? Present? pillary fringe) corded Data (stream	magery (B ²) e Surface (f (es 🖾 No (es 🖾 No (es 🖾 No n gauge, mo observed.	d: check all that app Water-Sta 1, 2, 4, Salt Crust Aquatic Int Hydrogen Oxidized F Presence Recent Iro Stunted or 7) Other (Exp 38) Depth (inchest Depth (inches	ly) ined Leaves (B9 A, and 4B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres ald of Reduced Iron n Reduction in T Stressed Plants blain in Remarks s): <u>surface</u> s): <u>0</u> photos, previous) (except MLF))))) (C4)	A S RA C uts (C3) C and Hydro if available	econdary Indicators (2 or more required) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Project/Site: 1415.0003 Hunt Elementary		City/County:	Puyallup/Pierce	Sampli	Sampling Date: 12/14/16			
Applicant/Owner: Puyallup School District	t		State: W	<u>A</u> Sampli	_ Sampling Point: DP6			
Investigator(s): Richard Peel, Emily Swain	n	S	ection, Township, Ran	ge: <u>14, 19, 4</u>				
Landform (hillslope, terrace, etc.): depres	sion	Local relief	_ocal relief (concave, convex, none): <u>concave</u> Slope (%): <u>0</u>					
Subregion (LRR): <u>A2</u>	I	at: <u>47.12745</u>	Long: <u>-122</u>	25658	Datum: WGS84			
Soil Map Unit Name: Kapowsin			N	WI classification: <u>N//</u>	A			
Are climatic / hydrologic conditions on the	site typical for this tin	ne of year? Yes 🛛	No 🗌 (If no, explain	in Remarks.)				
Are Vegetation, Soil, or Hyd	Irology signific	antly disturbed?	ed? Are "Normal Circumstances" present? Yes ⊠ No □					
Are Vegetation, Soil, or Hyd	Irology naturall	y problematic?	tic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS - Att	ach site map sh	owing sampling	point locations,	transects, impo	rtant features, etc.			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ⊠ No □ Yes □ No ⊠ Yes □ No ⊠	Is the withir	Sampled Area a Wetland?	Yes 🗌 No 🛛				

Remarks: Only hydrophytic vegetation criteria observed.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover	Species?	Status	Number of Dominant Species	
1. Populus balsamifera	<u>30</u>	<u>Y</u>	FAC	That Are OBL, FACW, or FAC: 3	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 3	(B)
4					· /
	30	= Total C	over	Percent of Dominant Species	(A/B)
Sapling/Shrub Stratum (Plot size: 15 ft)					(,,,,,,)
1. Rubus armeniacus	5	<u>Y</u>	FAC	Prevalence Index worksheet:	
2. Cytisus scoparius	1	N	FACU	Total % Cover of: Multiply by:	
3				OBL species x 1 =	_
4.				FACW species x 2 =	_
5.				FAC species x 3 =	_
	6	= Total C	over	FACU species x 4 =	_
Herb Stratum (Plot size: 5 ft)	-			UPL species x 5 =	_
1. Agrostis capillaris	90	Y	FAC	Column Totals: (A)	- (B)
2. Grass sp.	10	N	FAC*	()	_ ()
3				Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5.				Rapid Test for Hydrophytic Vegetation	
6.				Dominance Test is >50%	
7.				□ Prevalence Index is ≤3.0 ¹	
8.				Morphological Adaptations ¹ (Provide support	ing
9.				data in Remarks or on a separate sheet)	
10				Wetland Non-Vascular Plants ¹	
11				Problematic Hydrophytic Vegetation ¹ (Explain	ו)
···	100	– Total C	over	¹ Indicators of hydric soil and wetland hydrology n	nust
Woody Vine Stratum (Plot size: <u>30 ft</u>)	100	= 101010	0001	be present, unless disturbed or problematic.	
1					
2				Hydrophytic Vegetation	
		= Total C	over	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria observed through	n dominance	e test. *List	ed as facult	ative for scoring purposes only.	

Profile Desc	cription: (Describe	to the de	pth need	led to docur	nent the i	ndicator	or confirm	m the ab	sence	of indicators.)
Depth	Matrix			Redo	x Features	<u> </u>				
(inches)	Color (moist)	%	<u>Color (</u>	moist)	%	Type ¹	Loc ²	Textu	re	Remarks
0-6	<u>10YR 3/2</u>	98	<u>10YR 3</u>	8/6	2	С	Μ	<u>SaLo</u>		Sandy loam
6-16	10YR 4/3	95	<u>10YR 3</u>	8/6	5	C/CS	М	GrSaL	.0	Gravelly sandy loam (fill material)
1 Type: C-C	oncentration D-De	oletion RN		ed Matrix CS	S-Covered		ad Sand G	Praine	21.00	ation: PL-Pore Lining M-Matrix
Hvdric Soil	Indicators: (Applic	cable to a		unless other	wise note	ad.)	su Sanu G	lr	ndicato	rs for Problematic Hydric Soils ³ :
	(A1)		□ Sa	ndv Redox (S	5)	,		 Г	7 2 cm	Muck (A10)
	pipedon (A2)			pped Matrix	(S6)			Г	Red I	Parent Material (TF2)
Black His	stic (A3)			amy Mucky M	lineral (F1) (except	MLRA 1)		Very	Shallow Dark Surface (TF12)
Hydroge	n Sulfide (A4)		🗌 Loa	amy Gleyed N	Matrix (F2)			C] Othe	r (Explain in Remarks)
Depleted	Below Dark Surfac	e (A11)	🛛 De	pleted Matrix	(F3)					
Thick Da	rk Surface (A12)		🗌 Re	dox Dark Sur	face (F6)			3	ndicato	rs of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		🗌 De	pleted Dark S	Surface (F	7)			wetlar	nd hydrology must be present,
Sandy G	leyed Matrix (S4)			dox Depressi	ons (F8)				unless	s disturbed or problematic.
Tupo	Layer (if present):									
Type										
Depth (In	cnes):							Hydr	ic Soil	Present? Yes 🗌 No 🛛
Remarks: No	o hydric soil indicato	rs observe	d							
HYDROLO	GY									
Wetland Hv	drology Indicators	•								
Primary India	cators (minimum of	one require	ed: check	all that appl	V)				Secon	dary Indicators (2 or more required)
	Water (A1)		<u>, onoci</u>	l Water-Stai	ned Leave	s (B9) (e	xcent MI	RA		ater-Stained Leaves (B9) (MLRA 1 2
	ter Table (A2)			1.2.44	and 4B)	(DO) (C	xoopt me			4A, and 4B)
	(A3)		Г	Salt Crust	(R11)					ainage Patterns (B10)
	arks (B1)			Aquatic Inv	(BTT) ertebrates	(B13)				w-Season Water Table (C2)
	it Deposits (B2)			Hvdrogen S	Sulfide Od	or (C1)				turation Visible on Aerial Imagery (C9)
	(B3)] Oxidized R	hizospher	es along	l ivina Roa	ots (C3)		eomorphic Position (D2)
	t or Crust (B4)			Presence o	of Reduced	t Iron (C₄	Living i (o(013 (00)		allow Aquitard (D3)
	osits (B5)			Recent Iron	n Reductio	n in Tille	r) 1 Soils (Cf	6)		C-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or	Stressed I	Plants (D	1) (I RR A	() ()		hised Ant Mounds (D6) (I RR A)
	on Visible on Aerial	lmagery (F	(7)	Other (Exp	lain in Rer	narks)		•)		ost-Heave Hummocks (D7)
	Vegetated Concave	e Surface	(B8)			nanoj				
Field Obser	vations:		(20)							
Surface Wat	er Present?	∕es □ N	о⊠г	Depth (inches	;);					
Water Table	Present?)enth (inches	·)·					
Saturation D	resent?)enth (inchos	·)·		Wet	tland Hv	drology	Present? Yes 🗆 No 🕅
(includes ca	oillary fringe)				·/·		Wel		arology	
Describe Re	corded Data (stream	n gauge, m	onitoring	y well, aerial p	photos, pre	evious in	spections)	, if availa	able:	
Remarks: Hy	/drologic indicator D	2 observe	d.							

Project/Site: 1415.0003 Hunt Elementary	City/C	ounty: Puyallup/Pierce	Sampling Date: <u>12/14/16</u>				
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP7				
Investigator(s): Richard Peel, Emily Swaim		Section, Township, Range: 14,	19, 4				
Landform (hillslope, terrace, etc.): hillslope	Loca	Local relief (concave, convex, none): none Slope (%					
Subregion (LRR): <u>A2</u>	Lat: <u>47.12821</u>	Long: <u>-122.25788</u>	Datum: WGS84				
Soil Map Unit Name: <u>Kapowsin</u>		NWI clas	ssification: <u>N/A</u>				
Are climatic / hydrologic conditions on the site	typical for this time of year? Ye	es 🛛 🛛 No 🗌 (If no, explain in Rema	arks.)				
Are Vegetation, Soil, or Hydrolog	gy significantly disturbed	ed? Are "Normal Circumstances" present? Yes 🛛 No 🗌					
Are Vegetation, Soil, or Hydrolog	gy naturally problematic?	Illy problematic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS – Attach	site map showing sam	pling point locations, transe	ects, important features, etc.				
Hydrophytic Vegetation Present? Ye Hydric Soil Present? Ye Wetland Hydrology Present? Ye	xs ⊠ No □ xs □ No ⊠ xs □ No ⊠	Is the Sampled Area within a Wetland? Yes [] No 🛛				

Remarks: Only hydrophytic vegetation criteria observed.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2				Total Number of Dominant Species Across All Strata: 2	(B)
4					. (B)
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)		= Total C	Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u>	(A/B)
1				Prevalence Index worksheet:	
2	_			Total % Cover of: Multiply by:	
3.				OBL species x 1 =	
4.				FACW species x 2 =	
5.				FAC species x 3 =	
		= Total (Cover	FACU species x 4 =	
Herb Stratum (Plot size: <u>5 ft</u>)				UPL species x 5 =	
1. Phalaris arundinacea	<u>50</u>	<u>Y</u>	FACW	Column Totals: (A)	(B)
2. Agrostis capillaris	<u>45</u>	<u>Y</u>	FAC		
3. Lotus corniculatus	5	N	FAC	Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				Dominance Test is >50%	
7.				☐ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide support data in Remarks or on a separate sheet	orting t)
9				Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Expl	ain)
11				¹ Indicators of hydric soil and wetland hydrology	/ must
Woody Vine Stratum (Plot size: 30 ft)	<u>100</u>	= Total C	Cover	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
% Date Oraundia Llash Otratum 0		= Total C	Cover	Present? Yes 🛛 No 🗌	
% Bare Ground In Herb Stratum U Remarks: Hydrophytic vegetation criteria observed through	h dominance	a tost			
Temana. Hydrophydd vegetallon chlena observed llifodyl	uunnanu	6 1631.			

Sami	olina	Point.	DP7
Sam	Jing	FUIII.	

Profile Des	cription: (Describ	e to the de	pth ne	eded to docur	nent the i	ndicator	or confirn	n the ab	sence	of indicators.)
Depth	Matrix		-	Redo	x Features	6				
(inches)	Color (moist)	%	Colo	r (moist)	%	Type ¹	Loc ²	Textu	re	Remarks
0-8	<u>10YR 3/2</u>	100						SaLo		Sandy loam
8-18	10YR 4/3	95	10YF	R 4/6	5	С	М	GrSaL	0	Gravelly sandy loam
<u>o io</u>			<u></u>		<u> </u>	<u> </u>	<u></u>	0.00	<u> </u>	
·										
17 0 0										
Type: C=C	oncentration, D=De	pletion, RN		uced Matrix, CS	S=Covered	l or Coate	ed Sand Gi	rains.		cation: PL=Pore Lining, M=Matrix.
		cable to a				÷a.)		"		
	(A1) Vinadan (A2)			Sandy Redox (S	(SE)] 2 cm] Pod	MUCK (A10) Decent Material (TE2)
Black Hi	stic (A3)			oamy Mucky M	(30) Iineral (F1) (excent	MIRA 1)] Keu] Verv	Shallow Dark Surface (TE12)
	n Sulfide (A4)			oamy Gleved N	Matrix (F2)) (0.000	_	Г] Othe	er (Explain in Remarks)
	d Below Dark Surfac	ce (A11)		Depleted Matrix	(F3)			-	_ 0	
Thick Da	ark Surface (A12)		🗆 F	Redox Dark Sur	face (F6)			3	ndicato	ors of hydrophytic vegetation and
Sandy N	lucky Mineral (S1)			Depleted Dark S	Surface (F	7)			wetla	nd hydrology must be present,
Sandy G	Bleyed Matrix (S4)		☐ F	Redox Depressi	ions (F8)			•	unles	s disturbed or problematic.
Restrictive	Layer (if present):									
Type:										
Depth (in	ches):							Hydr	ic Soil	Present? Yes 🗌 No 🖂
Remarks: No	o hydric soil indicate	ors observe	ed.							
HYDROLO	GY									
Wetland Hv	drology Indicators	:								
Primary Indi	cators (minimum of	one requir	ed. che	eck all that appl	V)				Seco	ndary Indicators (2 or more required)
	Water (A1)	<u>ono roquin</u>	00,010	□ Water-Stai	ned Leave	s (B9) (e	xcept MI F	24	<u>о w</u>	ater-Stained Leaves (B9) (MI BA 1, 2
	iter Table (A2)			1. 2. 44	A and 4B)		Accept III 21		L	4A. and 4B)
	(A3)			□ Salt Crust	(B11)				Пр	rainage Patterns (B10)
□ Water M	arks (B1)				(ertebrates	(B13)				rv-Season Water Table (C2)
	nt Deposits (B2)			Hvdrogen S	Sulfide Od	or (C1)				aturation Visible on Aerial Imagery (C9)
	oosits (B3)			☐ Oxidized R	hizospher	es along	Livina Roo	ts (C3)	ΠG	eomorphic Position (D2)
	at or Crust (B4)			□ Presence o	of Reduced	d Iron (C4	g)			hallow Aquitard (D3)
☐ Iron Dep	oosits (B5)			Recent Iror	n Reductio	n in Tille	, d Soils (C6)		AC-Neutral Test (D5)
□ Surface	Soil Cracks (B6)			Stunted or	Stressed I	Plants (D	1) (LRR A)	,		aised Ant Mounds (D6) (LRR A)
Inundatio	on Visible on Aerial	Imagery (E	37)	Other (Exp	lain in Rer	narks)	, (,		🗌 Fi	ost-Heave Hummocks (D7)
Sparsely	Vegetated Concav	e Surface	(B8)	_ 、 .		,				
Field Obser	vations:									
Surface Wat	ter Present?	Yes 🗌 🛛 N	lo 🖂	Depth (inches	s):					
Water Table	Present?	Yes 🗍 🛛 N	lo 🖂	Depth (inches	s):					
Saturation P	resent?	Yes □ N	 lo 🖂	Depth (inches	s):		Wetl	and Hv	droloa	y Present? Yes 🗖 No 🖂
(includes ca	pillary fringe)				, <u> </u>					
Describe Re	corded Data (stream	n gauge, n	nonitori	ng well, aerial p	photos, pre	evious ins	spections),	if availa	ble:	
Remarks: No	o hydrologic indicate	ors observe	ed.							

Project/Site: 1415.0003 Hunt Elementary	City/Co	ounty: Puyallup/Pierce	Sampling Date: <u>12/14/16</u>
Applicant/Owner: Puyallup School District		State: WA	_ Sampling Point: DP8
Investigator(s): Richard Peel, Emily Swaim		Section, Township, Range: <u>14, 19,</u>	4
Landform (hillslope, terrace, etc.): hillslope	Local	relief (concave, convex, none): convex	Slope (%): <u>7</u>
Subregion (LRR): A2	Lat: <u>47.12770</u>	Long: <u>-122.25768</u>	Datum: WGS84
Soil Map Unit Name: <u>Kapowsin</u>		NWI classifi	cation: <u>N/A</u>
Are climatic / hydrologic conditions on the site typ	vical for this time of year? Ye	s 🖾 🛛 No 🔲 (If no, explain in Remarks	.)
Are Vegetation, Soil, or Hydrology _	significantly disturbed	? Are "Normal Circumstances" pr	esent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology _	naturally problematic?	(If needed, explain any answers	in Remarks.)
SUMMARY OF FINDINGS – Attach si	ite map showing samp	oling point locations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes [2] Hydric Soil Present? Yes [2] Wetland Hydrology Present? Yes [2]	 No □ No ∞ No ∞ 	Is the Sampled Area within a Wetland? Yes	No 🛛

Remarks: Only hydrophytic vegetation criteria observed.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1.	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: 2	(A)
2.					· · ·
3				Total Number of Dominant	(B)
۵				Species Across Air Strata. 2	(В)
4				Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 15 ft)		= 10tal C	over	That Are OBL, FACW, or FAC: <u>100</u>	(A/B)
1 Rubus armeniacus	5	Y	FAC	Prevalence Index worksheet:	
2	<u> </u>	<u> </u>	1710	Total % Cover of: Multiply by:	
2				$\frac{1}{1} \frac{1}{1} \frac{1}$	
3					-
4					-
5			·	FAC species X 3 =	-
Herb Stratum (Plot size: 5 ft)	5	= I otal C	over	FACU species X 4 =	-
1 Unidentified Cross on	00	V	EAC*	UPL species x 5 =	_
1. <u>Ondennied Grass sp.</u>	<u>00</u>	<u>r</u>		Column Totals: (A)	_ (B)
2. <u>Cirsium vuigare</u>	<u>10</u>	<u>N</u>	FACU	Brovalance Index - B/A -	
3. <u>Cirsium arvense</u>	10	<u>N</u>	FACU	Hydronbytic Verstation Indicators:	
4			·		
5			<u> </u>	Rapid Test for Hydrophytic Vegetation	
6				Dominance Test is >50%	
7				Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide support data in Remarks or on a separate sheet)	ing
9				Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain	ר)
11			<u> </u>	¹ Indicators of hydric soil and wetland hydrology n	nust
Woody Vine Stratum (Plot size: 30 ft)	<u>100</u>	= Total C	over	be present, unless disturbed or problematic.	
1				Undrandutia	
2			. <u> </u>	Vegetation	
		= Total C	over	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum <u>0</u>					
Remarks: Hydrophytic vegetation criteria observed through	h dominance	e test. *List	ed as facult	ative for scoring purposes only.	

Profile Description: (Describe	to the dep	th needed to docun	nent the in	dicator	or confirm	n the ab	sence	of indicators.)
Depth Matrix		Redox	Features					
(inches) Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Textu	re	Remarks
<u>0-8 10YR 3/4</u>	100	-	<u> </u>	<u> </u>		GrSaL	0	Gravelly sandy loam
	<u> </u>		· ·					
			· ·					
¹ Type: C=Concentration, D=Depl	etion, RM=	Reduced Matrix, CS	=Covered	or Coate	ed Sand Gr	ains.	² Loc	cation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applica	able to all	LRRs, unless other	wise note	d.)		In	dicato	ors for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy Redox (S	5)			С] 2 cm	n Muck (A10)
Histic Epipedon (A2)		Stripped Matrix (S6)				Red	Parent Material (TF2)
Black Histic (A3)		Loamy Mucky M	ineral (F1)	(except	MLRA 1)] Very	Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed N	latrix (F2)] Othe	er (Explain in Remarks)
Depleted Below Dark Surface	(A11)	Depleted Matrix	(F3)					
Thick Dark Surface (A12)		Redox Dark Sur	ace (F6)			3	ndicato	ors of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Depleted Dark S	urface (F7)			wetla	nd hydrology must be present,
Sandy Gleyed Matrix (S4)		Redox Depression	ons (F8)				unles	s disturbed or problematic.
Restrictive Layer (if present):								
Type:								
Depth (inches):						Hydr	ic Soil	Present? Yes 🗌 No 🖂
Remarks: Gravel and cemented r	estrictive la	ayer at a depth of 8 ir	nches.					
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of or	ne required	I; check all that apply	()				<u>Secor</u>	ndary Indicators (2 or more required)
Surface Water (A1)		Water-Stair	ned Leaves	s (B9) (e :	cept MLR	A	ωw	ater-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)		1, 2, 4A	, and 4B)					4A, and 4B)
Saturation (A3)		Salt Crust (B11)				🗆 Di	rainage Patterns (B10)
Water Marks (B1)		Aquatic Inv	ertebrates	(B13)				ry-Season Water Table (C2)
Sediment Deposits (B2)		Hydrogen S	Sulfide Odd	or (C1)			🗆 Sa	aturation Visible on Aerial Imagery (C9)
☐ Drift Deposits (B3)		☐ Oxidized R	nizosphere	s along	Livina Root	ts (C3)	ΠG	eomorphic Position (D2)
Algal Mat or Crust (B4)		☐ Presence o	f Reduced	Iron (C4	.)	()		hallow Aguitard (D3)
☐ Iron Deposits (B5)		Recent Iron	Reduction	n in Tilleo	, d Soils (C6))		AC-Neutral Test (D5)
Surface Soil Cracks (B6)		Stunted or	Stressed P	lants (D	1) (LRR A)	/		aised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial In	nagery (B7) Other (Expl	ain in Rem	arks)	.) (=,			rost-Heave Hummocks (D7)
	Surface (P			unto)				
Field Observations:	Canado (E	,						
Surface Water Procent?		M Dopth (inchos	۱.					
Mater Table Dree (2	≂o ∐ INO)·					
vvater Table Present? Ye	es∐ No	Depth (inches):					
Saturation Present? Ye	es ∐ No	Depth (inches):		Wetla	and Hye	drolog	y Present? Yes 📋 No 🖂
Describe Recorded Data (stream	dauge. mo	nitoring well, aerial r	hotos, pre	vious ins	pections)	if availa	ble:	
	J	, aonai p	, p.0		, , ,			
Remarks: No hydrologia indicator	e obsorved	1						
Tremarks. No myurologic mulcator	s observed	-						

Project/Site: 1415.0003 Hunt Elementary	City/C	County: Puyallup/Pierce Sampling Date: 12/14			
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP9		
Investigator(s): Richard Peel, Emily Swaim		Section, Township, Range: <u>14, 19</u> ,	, 4		
Landform (hillslope, terrace, etc.): Storm pond	Loca	al relief (concave, convex, none): <u>concav</u>	<u>ve</u> Slope (%): <u>1</u>		
Subregion (LRR): A2	Lat:	Long:	Datum: WGS84		
Soil Map Unit Name: Kapowsin		NWI classif	ication: <u>N/A</u>		
Are climatic / hydrologic conditions on the site typic	al for this time of year? Y	es 🛛 🛛 No 🗌 (If no, explain in Remark	s.)		
Are Vegetation, Soil, or Hydrology	significantly disturbed	d? Are "Normal Circumstances" p	resent? Yes 🛛 No 🗌		
Are Vegetation, Soil, or Hydrology	naturally problematic	? (If needed, explain any answers	s in Remarks.)		
SUMMARY OF FINDINGS – Attach site	e map showing sam	pling point locations, transect	ts, important features, etc.		
Hydrophytic Vegetation Present? Yes ⊠ Hydric Soil Present? Yes □ Wetland Hydrology Present? Yes ⊠	No 🗌 No 🖾 No 🗆	Is the Sampled Area within a Wetland? Yes	No 🖂		

Remarks: Hydrophytic vegetation and hydrologic criteria observed.

	Absolute	Dominan	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2				Total Number of Dominant	
3				Species Across All Strata: <u>1</u>	(B)
4				Deveent of Deminent Species	
		= Total C	Cover	That Are OBL, FACW, or FAC: <u>100</u>	(A/B)
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)					
1				Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	-
4				FACW species x 2 =	_
5				FAC species x 3 =	_
		= Total C	Cover	FACU species x 4 =	_
Herb Stratum (Plot size: <u>5 ft</u>)				UPL species x 5 =	_
1. Agrostis capillaris	60	<u>Y</u>	FAC	Column Totals: (A)	(B)
2. Leucanthemum vulgare	10	N	FACU		
3. Plantago lanceolata	<u>10</u>	N	FACU	Prevalence Index = B/A =	
4. Montia parvifolia	10	N	FAC	Hydrophytic Vegetation Indicators:	
5. Hypochaeris radicata	<u>10</u>	N	FACU	Rapid Test for Hydrophytic Vegetation	
6				Dominance Test is >50%	
7				□ Prevalence Index is $\leq 3.0^{1}$	
8				Morphological Adaptations ¹ (Provide supporti data in Remarks or on a separate sheet)	ng
9				Wetland Non-Vascular Plants ¹	
10		·		Problematic Hydrophytic Vegetation ¹ (Explain	n)
11				¹ Indicators of hydric soil and wetland hydrology m	nust
Woody Vine Stratum (Plot size: 30 ft)	<u>100</u>	= Total C	Cover	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
		= Total C	Cover	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria observed through	n dominance	e test.			

Sampling	Point:	DP9
1 0		

Profile Desc	ription: (Describe	e to the d	epth ne	eded to docur	nent the i	indicator	or confir	m the al	osence	e of indicators.)
Depth	Matrix			Redo	x Feature	<u>s</u>				
(inches)	Color (moist)		<u>Colo</u>	<u>r (moist)</u>	%	Type ¹	Loc ²	Textu	re	Remarks
0-9	<u>10YR 3/2</u>	100						<u>SaLo</u>		Sandy loam
9-10	10YR 4/2	99	10YF	R 4/6	1	CS	М	Sand		
			·							
¹ Type: C=Co	oncentration, D=De	pletion, R	M=Red	uced Matrix, CS	S=Covered	d or Coate	ed Sand G	irains.	² Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	ndicators: (Appli	cable to a	all LRR:	s, unless other	wise not	ed.)		li li	ndicate	ors for Problematic Hydric Soils ³ :
Histosol	(A1)			Sandy Redox (S	5)			E] 2 cn	n Muck (A10)
Histic Ep	ipedon (A2)			Stripped Matrix	(S6)			E] Red	Parent Material (TF2)
Black His	stic (A3)			_oamy Mucky N	lineral (F1) (except	MLRA 1)] Very	y Shallow Dark Surface (TF12)
	n Sulfide (A4)			oamy Gleyed N	Aatrix (F2))		Ľ] Oth	er (Explain in Remarks)
	Below Dark Surfac	e (A11)		Depleted Matrix	(F3)			2		
☐ Thick Da	rk Surface (A12)			Redox Dark Sur	face (F6)			3	ndicate	ors of hydrophytic vegetation and
Sandy M	ucky Mineral (S1)			Depleted Dark S	Surface (F	()			wetla	and hydrology must be present,
☐ Sandy G	leyed Matrix (S4)			Redox Depressi	ons (F8)				unies	ss disturbed or problematic.
Type:	_ayer (if present):									
Dopth (in										
Deptil (III								Hydi	IC SOI	I Present? Yes 📋 No 🖄
Remarks: No	hydric soil indicato	ors observ	ed. Cor	npacted restrict	ive layer a	at a depth	of 10 incl	nes. Doe	es not n	neet hydric soil indicator F3 as the
depleted laye	er does not have en	ough 2%	or more	e distinct or pror	ninent rec	doximorph	nic feature	s.		
	GY									
Wetland Llv	u i									
	arology indicators								•	
Primary India	ators (minimum of	one requi	rea; che	eck all that apply	<u>/)</u>				Seco	ndary Indicators (2 or more required)
	Water (A1)			Water-Stan	ned Leave	es (B9) (e	xcept ML	RA		Vater-Stained Leaves (B9) (MLRA 1, 2,
High Wa	ter Table (A2)			1, 2, 44	, and 4B)			_	4A, and 4B)
Saturatio	n (A3)			Salt Crust (B11)					prainage Patterns (B10)
Water Mater Mater	arks (B1)			Aquatic Inv	ertebrates	s (B13)				ry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen S	Sulfide Oc	lor (C1)			🛛 S	aturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized R	hizosphei	es along	Living Roo	ots (C3)	ΒG	eomorphic Position (D2)
Algal Ma	t or Crust (B4)			Presence of	of Reduce	d Iron (C4	4)		🗆 s	hallow Aquitard (D3)
Iron Dep	osits (B5)			Recent Iror	n Reductio	on in Tille	d Soils (Ce	5)	E E	AC-Neutral Test (D5)
Surface S	Soil Cracks (B6)			Stunted or	Stressed	Plants (D	1) (LRR A	.)	🗌 R	aised Ant Mounds (D6) (LRR A)
Inundation	on Visible on Aerial	Imagery (B7)	Other (Exp	lain in Re	marks)			🗌 F	rost-Heave Hummocks (D7)
Sparsely	Vegetated Concav	e Surface	(B8)							
Field Obser	vations:									
Surface Wat	er Present?	Yes 🗌	No 🖂	Depth (inches):					
Water Table	Present?	Yes□	No 🖂	Depth (inches):					
Saturation P	resent?	Yes □	No 🖂	Depth (inches):		Wet	land Hv	drolog	IV Present? Yes ⊠ No □
(includes cap	oillary fringe)			2 op (
Describe Re	corded Data (strear	n gauge,	monitor	ing well, aerial p	photos, pr	evious ins	spections)	, if availa	able:	
Remarks: Hy	drologic indicators	C9 and D	2 obser	ved.						
,	-									

Project/Site: 1415.0003 Hunt Elementary	City/	County: Puyallup/Pierce	Sampling Date: 12/14/16
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP10
Investigator(s): Richard Peel, Emily Swaim		Section, Township, Range: <u>14, 19, 4</u>	
Landform (hillslope, terrace, etc.): storm pond	Loc	al relief (concave, convex, none): <u>concave</u>	Slope (%): <u>0</u>
Subregion (LRR): <u>A2</u>	Lat: <u>47.12819</u>	Long: <u>-122.25756</u>	Datum: WGS84
Soil Map Unit Name: Kapowsin		NWI classifica	ation: <u>N/A</u>
Are climatic / hydrologic conditions on the site	typical for this time of year?	res 🛛 🛛 No 🗌 (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrolog	gy significantly disturbe	ed? Are "Normal Circumstances" pres	sent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrolog	gy naturally problematic	? (If needed, explain any answers ir	n Remarks.)
SUMMARY OF FINDINGS – Attach	site map showing san	npling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present?YeHydric Soil Present?YeWetland Hydrology Present?Ye	IS ⊠ No □ IS □ No ⊠ IS □ No ⊠	Is the Sampled Area within a Wetland? Yes 🗌 N	lo 🖂

Remarks: Only hydrophytic vegetation criteria observed. Data point at storm pond.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A))
2				Total Number of Dominant	
3				Species Across All Strata: 3 (B)	
4		= Total C	over	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/E	3)
1. Rosa nutkana	20	<u>Y</u>	FAC	Prevalence Index worksheet:	
2				Total % Cover of: Multiply by:	
3				OBL species x 1 =	
4				FACW species x 2 =	
5				FAC species x 3 =	
		= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>5 ft</u>)				UPL species x 5 =	
1. Phalaris arundinacea	40	<u>Y</u>	FACW	Column Totals: (A) (E	3)
2. <u>Agrostis capillaris</u>	40	<u>Y</u>	FAC		
3. Ranunculus repens	10	N	FAC	Prevalence Index = B/A =	
4. Plantago lanceolata	10	N	FACU	Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6				Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 ¹	
8		. <u></u>		Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9				Wetland Non-Vascular Plants ¹	
				Problematic Hydrophytic Vegetation ¹ (Explain)	
11	400			¹ Indicators of hydric soil and wetland hydrology must	t
Woody Vine Stratum (Plot size: <u>30 ft</u>)	100	= I otal C	over	be present, unless disturbed or problematic.	
1				Hydrophytic	
2				Vegetation	
		= Total C	over	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum <u>0</u>	dominare	- toot			
Remarks. Hydrophytic vegetation criteria observed through	ominance	e test.			

Profile Desc	cription: (Descril	be to the d	epth ne	eeded to docur	nent the ir	ndicator	or confirm	n the at	osence	of indicators.)
Depth	Matrix			Redo	x Features					
(inches)	Color (moist)	%	<u>Colc</u>	or (moist)	%	Type ¹	Loc ²	Textu	ire	Remarks
<u>0-9</u>	<u>10YR 3/2</u>	100						<u>SaLo</u>		sandy loam; unconsolidated
			·			<u> </u>				
	oncontration D-D	oplotion P	M-Pod	lucad Matrix C		or Coat	d Sand Cu	raine	21 0	action: DL-Doro Lining M-Matrix
Hydric Soil	Indicators: (App	licable to a		s unless othe	rwise note		eu Sanu Gi	rains. Ir	ndicato	rs for Problematic Hydric Soils ³
	(A1)			Sandy Redox (S	35)	u.)		г		Muck (A10)
	(A1) bipedon (A2)			Stripped Matrix	(S6)					Parent Material (TF2)
Black His	stic (A3)			Loamv Muckv N	(ineral (F1)	(except	MLRA 1)	Г] Verv	Shallow Dark Surface (TF12)
	n Sulfide (A4)			Loamv Gleved I	Matrix (F2)	(Г	∃ Othe	er (Explain in Remarks)
Depleted	Below Dark Surfa	ace (A11)		Depleted Matrix	(F3)			_		
☐ Thick Da	rk Surface (A12)	()		Redox Dark Su	face (F6)			3	Indicato	ors of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)			Depleted Dark S	Surface (F7	<i>'</i>)			wetla	ind hydrology must be present,
🔲 Sandy G	leyed Matrix (S4)			Redox Depress	ions (F8)				unles	s disturbed or problematic.
Restrictive	Layer (if present)	:								
Type:				-						
Depth (in	ches):							Hydı	ric Soil	Present? Yes 🗌 No 🖂
Remarks: Ro	ocky restrictive lay	er at a dep	th of 9 i	inches. No hydr	ic soil indic	ators pre	esent.			
HYDROLO	GY									
Wetland Hy	drology Indicato	'S:								
Primary India	cators (minimum c	f one requi	red; ch	eck all that appl	y)				Seco	ndary Indicators (2 or more required)
Surface	Water (A1)			Water-Stai	ned Leaves	s (B9) (e	xcept MLF	RA	ΠW	ater-Stained Leaves (B9) (MLRA 1, 2,
🔲 High Wa	ter Table (A2)			1, 2, 4/	A, and 4B)					4A, and 4B)
Saturation	on (A3)			Salt Crust	(B11)				D	rainage Patterns (B10)
Water M	arks (B1)			Aquatic Inv	vertebrates	(B13)			D	ry-Season Water Table (C2)
Sedimen	t Deposits (B2)			Hydrogen	Sulfide Odd	or (C1)			🗆 S	aturation Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Oxidized R	hizosphere	es along	Living Roo	ts (C3)	ΠG	eomorphic Position (D2)
🗌 Algal Ma	t or Crust (B4)			Presence of	of Reduced	Iron (C4	- -		🗆 s	hallow Aquitard (D3)
Iron Dep	osits (B5)			Recent Iro	n Reductio	n in Tille	d Soils (C6	5)	🗆 F/	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)			Stunted or	Stressed F	Plants (D	1) (LRR A))	🗆 R	aised Ant Mounds (D6) (LRR A)
Inundation	on Visible on Aeria	I Imagery (B7)	Other (Exp	lain in Rem	narks)	, , ,		E Fi	rost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ive Surface	(B8)	_ 、		,				(
Field Obser	vations:									
Surface Wat	er Present?	Yes 🗌	No 🖂	Depth (inches	s):					
Water Table	Present?	Yes □	No 🖂	Depth (inches	s):					
Saturation P	resent?	Yes 🗆	No 🖂	Depth (inches); s);		Wetl	and Hv	droloa	v Present? Yes 🗌 No 🖂
(includes cap	oillary fringe)			Boptil (monoc	»)·					
Describe Re	corded Data (strea	am gauge,	monito	ring well, aerial	photos, pre	vious ins	spections),	if availa	able:	
Remarks: No	o hydrologic indica	tors observ	/ed.							

Project/Site: 1415.0003 Hunt Elementary	City/C	ounty: Puyallup/Pierce	Sampling Date: 12/14/16
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP11
Investigator(s): Richard Peel, Emily Swaim		Section, Township, Range: <u>14, 19, 4</u>	
Landform (hillslope, terrace, etc.): valley/storm pond	Loca	I relief (concave, convex, none): <u>concave</u>	Slope (%): <u>0</u>
Subregion (LRR): A2	Lat: <u>47.12822</u>	Long: <u>-122.25689</u>	Datum: WGS84
Soil Map Unit Name: <u>Kapowsin</u>		NWI classificat	ion: <u>N/A</u>
Are climatic / hydrologic conditions on the site typical f	for this time of year? Ye	es 🛛 No 🗌 (If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology	_ significantly disturbed	? Are "Normal Circumstances" pres	ent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site r	map showing sam	pling point locations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes ⊠ N Hydric Soil Present? Yes □ N Wetland Hydrology Present? Yes □ N	lo □ lo ⊠ lo ⊠	Is the Sampled Area within a Wetland? Yes No	

Remarks: Only hydrophytic vegetation criteria observed. Data point at storm pond.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft)	% Cover	Species?	Status	Number of Dominant Species	
1.				That Are OBL, FACW, or FAC: 3	(A)
2.		·			()
3				Total Number of Dominant	(B)
۰					(0)
4		Tatal C		Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 15 ft)			over	That Are OBL, FACW, or FAC: 100	(A/B)
1 Rosa nutkana	20	Y	FAC	Prevalence Index worksheet:	
2	20	_ <u></u>	<u>1710</u>	Total % Cover of: Multiply by:	
2		·		OPL species x1-	
3		·			_
4		·		FACW species	_
5		·		FAC species x 3 =	_
		= Total C	over	FACU species x 4 =	_
Herb Stratum (Plot size: 5 ft)				UPL species x 5 =	_
1. Unidentified Grass sp.	<u>35</u>	<u>Y</u>	FAC*	Column Totals: (A)	_ (B)
2. Agrostis capillaris	35	Y	FAC		
3. Lathyrus tuberosus	20	Y	FAC	Prevalence Index = B/A =	
4. Rubus ursinus	10	N	FACU	Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6.				Dominance Test is >50%	
7.				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide support	ting
o		·		data in Remarks or on a separate sheet)	•
3		·		Wetland Non-Vascular Plants ¹	
		·		Problematic Hydrophytic Vegetation ¹ (Explai	n)
11				¹ Indicators of hydric soil and wetland hydrology r	nust
Woody Vine Stratum (Plot size: 30 ft)	100	= I otal C	over	be present, unless disturbed or problematic.	
1					
2		·		Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 0		= I otal C	over		
Remarks: Hydrophytic vegetation criteria observed throug	h dominance	e test. *List	ed as facult	tative for scoring purposes only.	

Sampling	Point [.]	DP11
oumpring	i onit.	

Depth Matrix Redox Features Texture Remarks 94 107R.3/3 100	Profile Des	cription: (Describe	to the de	epth need	ded to docur	nent the i	ndicator	or confirm	n the ab	sence of indicators.)
Inchesis Color (moist) % GisLab grandwise grandwise 20 10YR 4/3 95 10YR 4/6 5 GS M Sailub sandwise sandwise 20 10YR 4/3 95 10YR 4/6 5 GS M Sandwise	Depth	Matrix			Redo	x Features	<u>s</u>			
0-8 10/R 3/3 100	(inches)	Color (moist)	%	<u>Color (</u>	moist)	%	Type ¹	Loc ²	Textu	re Remarks
<u>B220</u> 10YR 4/3 95 10YR 4/6 5 CS M Salo sandy loam	0-8	<u>10YR 3/3</u>	100						<u>GrSaL</u>	o gravelly sandy loam
Type: C-Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosci (A) Sinipped Matrix (S6) 2 or Muck (A10) Histosci (A3) Loamy Muckly Minoral (F1) (except MLRA 1) Very Snalow Dark Surface (TF2) Depleted Below Dark Surface (TF1) Depleted Below Dark Surface (TF12) Black Histic (A3) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (TF1) Depleted Below Dark Surface (TF12) Sandy Mucky Mineral (S1) Depleted Below Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Below Dark Surface (F7) Price Layer (If present): Type: Depletic Below Gindentors: Primary Indicators: Firmary Indicators: No E Restrictive Layer (If present): 1, 2, 4A, and 4B) Saturation (A3) Saturation (A2) Saturation (A3) Aquets Chinetae (B1) Saturation (A3) Aquets Chinetae (B1) Saturation (A3) Aquets Chinetae (B1) Saturation (A3) Aduet Chineterse (B1) Saturation (X3)	8-20	<u>10YR 4/3</u>	<u>95</u>	<u>10YR 4</u>	4/6	5	CS	M	<u>SaLo</u>	sandy loam
Type: C-Concentration, D-Depietion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL-Pore Lining, M-Matrix, Pdyric Soil Indicators for Problematic Hydric Soils*: Histo: Epigeon (A2) Bandy Redox (S5) Indicators for Problematic Hydric Soils*: Histo: Epigeon (A2) Bripped Matrix (S6) 2 cm Muck (A10) Depidend Delow Dark Surface (A11) Loamy Mucky Minera (F1) (cxcept MLRA 1) Other (Explain in Remarks) Depidend Delow Dark Minera (S1) Depidend Dark Surface (F12) Other (Explain in Remarks) Sandy Mucky Mineral (S1) Depidend Dark Surface (F12) wets Statute of problematic Pugrices on thydrophytic vagetation and watch of problematic. Sandy Mucky Mineral (S1) Depidend Dark Surface (F7) wetsand hydrology muck to present, unless disturbed or problematic. Sandy Mucky (B1) Redox Depressions (F8) unless disturbed or problematic. Wetland Hydrology Indicators: Premary Indicators (B1) Aq and 4B) Satzration (A3) Sat Cruck (B1) Danage Paterns (B10) Water Stained Leaves (B9) (wetper MLRA 1) Paterns (B10) Danage Paterns (B10) Water Marks (B1) Aq and 4B) Danage Paterns (B10) Danage Paterns (B10) Satzaration (A3) Sata Cruck (B1) Danage Paterns (B10)										
Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. Hydric Soli Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Porbenatic Hydric Solis*: Histoco (1/1) Sandy Redox (SS) 2 com Muck (A10) Bitack Histic Exploredon (A2) Stripped Matrix (S5) Red Parent Material (TF2) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Delw Dark Surface (A11) Depleted Dark Surface (F6) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Cleyed Matrix (S4) Depleted Dark Surface (F7) unless disturbed or problematic. Restrictive Layer (If present): Type:										
Type: C-Concentration, D-Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M-Matrix. Hydric Soli Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solis*: Histic Epipedin (A2) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedin (A2) Loarny Mucky Mineral (P1) (except MLRA 1) Uvery Shallow Dark Surface (T12) Hydrigon Surface (A12) Depleted Matrix (S8) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F2) Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F2) Indicators of hydrophytic vegetation and Sandy Gleyd Matrix (S3) Depleted Dark Surface (F2) Indicators of hydrophytic vegetation and Sandy Gleyd Matrix (S3) Depleted Dark Surface (F2) Indicators of hydrophytic vegetation and Sandy Gleyd Matrix (S4) Depleted Dark Surface (F2) Indicators (B1) Indicators (B1) Depth (Inches): Type: Type: Indicators (B1) Indicators (B1) Indicators (B1) Sarticow Vater (A1) Vater Saltaned Laxes (B9) (except MLRA A, and 4B) A, and 4B) Gataration Visible on Aerial Imagery (C3) A, and 4B) Drainage Paterns (B1)										
Type: C-Concentration. D-D-Depletion., RM-Reduced Matrix, CS-Covered or Coated Sand Grains. I.dcations for Problematic Hydric Solis': Hydric Soli Indicators: (Applicable to all LR6s, unless otherwise noted.) Indicators for Problematic Hydric Solis': Histosol (A1) Sandy Redox (S5) Dev Muck (A10) Biack Histic Epipedon (A2) Stripped Matrix (S6) Dev Wy Shallow Dark Surface (TF12) Depleted Dev Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remarks) Depleted Bow Dark Surface (A11) Redox Dark Surface (F7) weltand hydrology must be present, unless disturbed or problematic. Restrictive Layer (If present): Type: Depleted Dark Surface (F7) weltand hydrology must be present, unless disturbed or problematic. Restrictive Layer (If present): Type: Depleted Dark Surface (F7) weltand hydrology must be present, unless disturbed or problematic. Restrictive Layer (If present): Type: Depth (inches): No [2] Path Mydric Soli Indicators diserved. Water Stained Leaves (B9) (except MLRA 1 Data serves (B9) (MLRA 1, 2, 4A, and 4B) Surface Water (A1) Saft Crust (B11) Data serve Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Data serve Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Surface Water (A1) Hydrice Soli Indicators (B10)										
Type: C-Concentration. D-Depletion. RM-Reduced Matrix. CS-Covered or Coated Sand Grains. ?Location: PL=Pore Lining. M-Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histic Eppedon (A2) Stripped Matrix (S6) 2 cm Muck (A10) Histic Eppedon (A2) Stripped Matrix (F2) Cm Muck (A11) Hydrogen Sulfde (A4) Learny Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (T12) Hydrogen Sulfde (A4) Learny Gleyd Matrix (F2) Cher (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Indicators of hydrology must be present, unless disturbed or problematic. Sandy Gleyd Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: Deptheted Nark Surface (F7) Type: Deptheted Nark Surface (F7) unless disturbed or problematic. Restrictive Layer (if present): Type: No E Type: Deptheted Nark Surface (F7) unless disturbed or problematic. Surface Water (A1) Water-Stained Leaves (B9) (w.RA 1, 2, 4A, and 4B) Deptheted Nark Surface (F7) Surface Water (A1) Salt Cruss (B11) Daniage Patterns (B10) Dru										
Type: C-Concentration, D-Depletion, RM-Reduced Matrix, CS-Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix, Hydric Soils': Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils': Histosol (A1) Sandy Redox (S5) Red Parent Material (TF2) Black Histic Epipedon (A2) Diriped Matrix (S6) Red Parent Material (TF2) Dirick Oark Surface (A1) Learny Mucky Mineral (F1) (except MLRA 1) Other (Explain in Remarks) Depleted Matrix (S4) Redox Dark Surface (F7) Indicators for problematic. Sandy Mucky Mineral (S1) Depleted Matrix (S4) Redox Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (If present): Type:										
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²⁺ Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils': Histosci (A1) Stripped Matrix (S6) C arm Muck (A10) Black Hists (A3) Loarny Mucky Mineral (F1) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remarks) Standy Mucky Mineral (S1) Depleted Dark Surface (F7) welland Hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:										
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histic Epigedon (A2) Stripped Matrix (Sb) 2 cm Muck (A10) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Red Parent Material (TF2) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) *Indicators of hydrophytic vegetation and wetland hydrogy must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Depleted Matrix (S4) unless disturbed or problematic. Restrictive Layer (if present): Trype: unless disturbed or problematic. Propertificators observed. Hydric Soil Present? Yes No [2] No [2] Pitrace Water (A1) Uster-Stained Leaves (B9) (except MLRA 4A, and 4B) High Water Table (A2) 1, 2, 4A, and 4B) Dry-Season Water Table (A2) High Water Table (A2) Hydrice Soil Fresent (Present Present	¹ Tvpe: C=C	oncentration. D=De	oletion. RI	∕l=Reduc	ed Matrix. CS	S=Covered	l or Coate	ed Sand Gr	rains.	² Location: PL=Pore Lining, M=Matrix,
□ Sandy Redox (S5) □ Cm Muck (A10) □ Histic Epipedion (A2) □ Stripped Matrix (S6) □ Red Parent Material (TF2) □ Hydrogen Sulfide (A4) □ Loamy Muck Mineral (F1) (except MLRA 1) □ Very Shallow Dark Surface (TF12) □ Depieted Matrix (F2) □ Other (Explain in Remarks) □ Thick Dark Surface (A12) □ Depieted Matrix (F3) □ □ Sandy Gleyed Matrix (F3) □ Depieted Matrix (F3) □ □ Sandy Gleyed Matrix (F3) □ Depieted Matrix (F3) □ □ Sandy Gleyed Matrix (F3) □ Depieted Matrix (F3) □ □ Sandy Gleyed Matrix (F3) □ Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type:	Hydric Soil	Indicators: (Applie	cable to a	ll LRRs,	unless other	wise note	ed.)		Ir	ndicators for Problematic Hydric Soils ³ :
□ Stripped Matrix (S6) □ Batck Histic (A2) □ Chamy Mucky Mineral (F1) (except MLRA 1) □ Very Shallow Dark Surface (TF12) □ Black Histic (A3) □ Loamy Mucky Mineral (F1) □ Very Shallow Dark Surface (A11) □ Depleted Below Dark Surface (A12) □ Redox Dark Surface (F7) wetland hydrology must be present, wetland hydrology indicators (F8) Restrictive Layer (if present): Type:	Histosol	(A1)		🗌 Sa	ndy Redox (S	S5)				2 cm Muck (A10)
□ Black Histic (A3) □ Loamy Wucky Mineral (F1) (except MLRA 1) □ Very Shallow Dark Surface (FF12) □ Hydrogen Sulfade (A4) □ Loamy Gleyed Matrix (F2) □ Other (Explain in Remarks) □ Brick Dark Surface (A11) □ Depleted Matrix (F3) □ Intick Dark Surface (A12) □ Redox Dark Surface (FF1) □ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) welland Hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:	Histic Ep	pipedon (A2)		🗌 Str	ipped Matrix	(S6)			Γ	Red Parent Material (TF2)
I Hydrogen Sulfide (A4) □ Loamy Gleyed Matrix (F2) □ Other (Explain in Remarks) □ Depleted Below Dark Surface (A11) □ Depleted Mark (F2) □ Other (Explain in Remarks) □ Sandy Gleyed Matrix (S4) □ Redox Dark Surface (F7) welland hydrology must be present, □ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type:	Black Hi	stic (A3)		Lo:	amy Mucky N	lineral (F1) (except	MLRA 1)		Very Shallow Dark Surface (TF12)
□ bepteted below Dark Sufface (A1) □ Depleted Matrix (F3) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. □ Sandy Mucky Mineral (S1) □ Depleted Dark Sufface (F6) unless disturbed or problematic. ■ Sandy Gleyed Matrix (S4) □ Redox Dark Sufface (F7) unless disturbed or problematic. ■ Sandy Gleyed Matrix (S4) □ Redox Dark Sufface (F7) unless disturbed or problematic. ■ Sandy Gleyed Matrix (S4) □ Redox Dark Sufface (F7) unless disturbed or problematic. ■ Sandy Gleyed Matrix (S4) □ Redox Dark Sufface (F7) unless disturbed or problematic. ■ Bepth (inches): □ Depleted Laver (F8) unless disturbed or problematic. ■ Hydroic soil Indicators observed. ■ Hydric Soil Present? Yes □ No ☑ No ☑ *VENOLOGY ■ Vettand Hydrology Indicators: ■ Hydroic Vettators (B1) □ Carlange Patterns (B10) □ Saturation (A3) □ Saturation (A3) □ Saturation (A3) □ Saturation (C1) □ Dariage Patterns (B10) □ Saturation (A3) □ Saturation (C1) □ Dariage Patterns (B10) □ Saturation (C2) □ Saturation (C2)<		n Sulfide (A4)			amy Gleyed N	Matrix (F2)				Other (Explain in Remarks)
□ Induct Dark Sufface (PD) Inductators of inducta		d Below Dark Surfac	e (A11)		pleted Matrix	(F3) food (E6)			31	ndiastors of hydrophytic vegetation and
□ Sandy Glavy Matrix (S4) □ Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type:		lucky Mineral (S1)			oleted Dark Su	Surface (F	7)		I	wetland hydrology must be present
Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes No ⊠ Remarks: No hydric soil indicators observed. Hydric Soil Present? Yes No ⊠ Hydric Soil Present? Yes No ⊠ Primary Indicators (minimum of one required: check all that apply) Secondary Indicators (2 or more required) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4, and 4B) Baturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) With Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Orti Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard Tos! (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Shuraton Present? Yes No Depth (inches): 16	Sandy G	leved Matrix (S4)			dox Depressi	ons (F8)	,			unless disturbed or problematic.
Type:	Restrictive	Layer (if present):				()				
Depth (inches): Hydric Soil Present? Yes No Remarks: No hydric soil indicators observed. Hydric Soil Present? Yes No APDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Big Water Atter (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Big Water Table (A2) 1, 2, 4A, and 4B) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Ad, and 4B) Saturation (A3) Saturation (A3) Dait Crust (B1) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Jurface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Sutrace Soil Cracks (B6) Depth (inches): 18	Type:									
Remarks: No hydric soil indicators observed. HYDROLOGY 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 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) High Water Table (A2) 1, 2, 4A, and 4B) 4A, and 4B) Saturation (A3) Salt Crust (B1) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Dift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) In on Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAc-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Setiface Surface Water Present? Yes No Depth (inches): 18	Depth (in	ches):							Hydr	ic Soil Present? Yes 🗌 No 🖂
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) U grade Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) High Water Table (A2) 1, 2, 4A, and 4B) 4A, and 4B) Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Diff Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Alagal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Saturation Present? Yes No Depth (inches): 18 Saturation Present? Yes No Depth (inches): 18 Wetland Hydrology Present? Ye	Remarks: N	o hydric soil indicato	rs observe	ed.						
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Sufface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) High Water Table (A2) 1, 2, 4A, and 4B) 4A, and 4B) Saturation (A3) Sati Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Solis (C6) FAC-Neutral Test (D5) Sufface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Sufface (B8) Saturation Present? Yes No No M Field Observations: Saturation Present? Yes No No M No M		-								
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Image: Section end of points (D2) Image: Section end of (C1) Image: Section end of (C1) Image: Section end of		at Deposite (B2)] Hydrogen (or $(C1)$			\square Saturation Visible on Aerial Imageny (C0)
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□ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC-Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) ■ Frield Observations: Surface Water Present? Yes □ No □ Depth (inches): 18 Water Table Present? Yes □ No □ Depth (inches): 16 Wetland Hydrology Present? Yes □ No □ □ Depth (inches): 16 Wetland Hydrology Present? Yes □ No □ □ Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		at or Crust (B4)				of Reduced	d Iron (C4		13 (00)	$\square Shallow Aguitard (D3)$
□ Instruction (Co) Instruction		(B5)			Recent Iror	n Reductio	n in Tille	, 1 Soils (C6)	FAC-Neutral Test (D5)
□ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) □ Frost-Heave Hummocks (D7) Field Observations:	□ Surface	Soil Cracks (B6)		Г	Stunted or	Stressed	Plants (D	1) (LRR A))	Raised Ant Mounds (D6) (LRR A)
□ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No □ Depth (inches): Water Table Present? Yes □ No □ Depth (inches): 18 Saturation Present? Yes □ No □ Depth (inches): 16 Wetland Hydrology Present? Yes □ No □ Depth (inches): 16 Wetland Hydrology Present? Yes □ No □ Depth (inches): 16 Cincludes capillary fringe) Depth (inches): nevious inspections), if available: Remarks: No hydrologic indicators observed.	Inundation	on Visible on Aerial	Imagery (E	 37) [Other (Exp	lain in Rer	narks)	,, ,		Frost-Heave Hummocks (D7)
Field Observations: Surface Water Present? Yes No Depth (inches):	Sparsely	Vegetated Concav	e Surface	(B8)			,			
Surface Water Present? Yes No Depth (inches):	Field Obser	vations:								
Water Table Present? Yes ⊠ No □ Depth (inches): 18 Saturation Present? Yes ⊠ No □ Depth (inches): 16 Wetland Hydrology Present? Yes □ No ⊠ includes capillary fringe) Depth (inches): 16 Wetland Hydrology Present? Yes □ No ⊠ Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No hydrologic indicators observed. Vestor No ⊠	Surface Wat	er Present?	res 🗌 🛛 🛛	lo 🛛 🛛	Depth (inches	s):				
Saturation Present? Yes I No I Depth (inches): 16 Wetland Hydrology Present? Yes I No IX (includes capillary fringe) Depth (inches): 16 Wetland Hydrology Present? Yes I No IX Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Image: Comparison of the stream gauge indicators observed. Image: Comparison of the stream gauge indicators observed.	Water Table	Present?	res 🖂 🛛 🛚	No 🗌 🛛 I	Depth (inches	s): <u>18</u>				
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No hydrologic indicators observed.	Saturation P	resent?	res 🖂 🛛 🛚	No 🗌 🛛 I	Depth (inches	s): <u>16</u>		Wetl	and Hy	drology Present? Yes 🗌 No 🖂
Remarks: No hydrologic indicators observed.	(includes ca	pillary fringe)							14 min 14	b las
Remarks: No hydrologic indicators observed.	Describe Re	corded Data (stream	n gauge, r	nonitoring	g well, aerial j	onotos, pre	evious ins	spections),	ıt avaıla	adie:
Remarks: No hydrologic indicators observed.			<u> </u>							
	Remarks: N	o nydrologic indicato	ors observ	ed.						

Project/Site: 1415.0003 Hunt Elementa	City/Cou	inty: <u>Puyallup/Pierce</u>	S	ampling Date: <u>12/14/16</u>			
Applicant/Owner: Puyallup School Dist		State:	WA S	ampling Point: DP12			
Investigator(s): Richard Peel, Emily Sw	aim		Section, Township, Ra	ange: <u>14, 19, 4</u>			
Landform (hillslope, terrace, etc.): Depr	ression	Local r	elief (concave, convex, n	one): <u>convex</u>	Slope (%): <u>5</u>		
Subregion (LRR): <u>A2</u>		Lat: <u>47.127967</u>	Long: <u>-1</u>	22.256891	Datum: WGS84		
Soil Map Unit Name: <u>Kapowsin</u>				NWI classificatio	n: <u>N/A</u>		
Are climatic / hydrologic conditions on t	he site typical for t	this time of year? Yes	🛛 No 🗌 (If no, explai	n in Remarks.)			
Are Vegetation, Soil, or ⊢	lydrology s	ignificantly disturbed?	Are "Normal Circu	mstances" preser	it? Yes 🛛 No 🗌		
Are Vegetation, Soil, or ⊢	lydrology na	aturally problematic?	(If needed, explain	any answers in R	emarks.)		
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes ⊠ No [Yes □ No [Yes □ No [2	Is a a	the Sampled Area ithin a Wetland?	Yes 🗌 No [3		

Remarks: Only hydrophytic vegetation criteria observed.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30 ft</u>) 1	<u>% Cover</u>	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A))
2				Total Number of Dominant	
3				Species Across All Strata: <u>6</u> (B)	
4				Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 15 ft)		= Total C	over	That Are OBL, FACW, or FAC: <u>66</u> (A/E	3)
1. Salix scouleriana	5	Y	FAC	Prevalence Index worksheet:	
2. Rubus armeniacus	5	Y	FAC	Total % Cover of:Multiply by:	
3. Cvtisus scoparius	1	N	FACU	OBL species x 1 =	
4.				FACW species x 2 =	
5.				FAC species x 3 =	
	11	= Total C	over	FACU species x 4 =	
Herb Stratum (Plot size: <u>5 ft</u>)	<u></u>			UPL species x 5 =	
1. Agrostis capillaris	50	<u>Y</u>	FAC	Column Totals: (A) (E	B)
2. <u>Pteridium aquilinum</u>	20	<u>Y</u>	FACU		,
3. Phalaris arundinacea	20	Y	FACW	Prevalence Index = B/A =	
4. Leucanthemum vulgare	5	N	FACU	Hydrophytic Vegetation Indicators:	
5. Ranunculus repens	5	N	FAC	Rapid Test for Hydrophytic Vegetation	
6				Dominance Test is >50%	
7				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9				Wetland Non-Vascular Plants ¹	
				Problematic Hydrophytic Vegetation ¹ (Explain)	
11	400			¹ Indicators of hydric soil and wetland hydrology must	t
Woody Vine Stratum (Plot size: 30 ft)	100	= Total C	over	be present, unless disturbed or problematic.	
1. Rubus laciniatus	5	<u>Y</u>	FACU	Underse hadie	
2				Vegetation	
		= Total C	over	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum 0					
Remarks: Hydrophytic vegetation criteria observed through	n dominance	e test.			

Sampling	Point [.]	DP12
oumphing	i onit.	

Profile Des	cription: (Describe	to the de	oth needed to docu	ment the i	ndicator	or confirm	the ab	sence of indicators.)
Depth	Matrix		Redo	ox Feature	<u>s</u>			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Textur	e Remarks
<u>0-14</u>	<u>10YR 2/1</u>	100	-				<u>GrSaLo</u>	gravelly sandy loam
14-18	<u>10YR 4/4</u>	98	<u>10YR 4/6</u>	2	С	М	GrSaLo	gravelly sandy loam
					·			
					·			
¹ Type: C=C	concentration, D=De	oletion, RM	Reduced Matrix, C	S=Covered	d or Coate	ed Sand Gr	ains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applie	cable to al	LRRs, unless othe	rwise not	ed.)		In	dicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox (S5)				2 cm Muck (A10)
Histic Ep	oipedon (A2)		Stripped Matrix	(S6)				Red Parent Material (TF2)
Black Hi	istic (A3)		Loamy Mucky N	/lineral (F1) (except	MLRA 1)		Very Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)	- (Loamy Gleyed	Matrix (F2))			Other (Explain in Remarks)
	u below Dark Suriad ark Surface (A12)	e (ATT)		rface (F6)			³ Ir	dicators of hydrophytic vegetation and
Sandy N	Aucky Mineral (S1)		Depleted Dark	Surface (F	7)			wetland hydrology must be present.
Sandy G	Gleyed Matrix (S4)		Redox Depress	ions (F8)	,			unless disturbed or problematic.
Restrictive	Layer (if present):							
Туре:								
Depth (in	nches):						Hydri	c Soil Present? Yes 🗌 No 🛛
Remarks: N	o hydric soil indicato	rs observe	d.					
	GY							
Wetland Hy	drology Indicators							
		·	d, abaal, all that ann	6.0				Cocondon (Indicators (2 or more required)
		one require		iy) inod Loov			•	Secondary Indicators (2 of more required)
	vvater (A1)				es (B9) (e	хсерт міск	A	Water-Stained Leaves (B9) (MLRA 1, 2,
	(A3)		, ∠, 4 /	(R11)	,			\square Drainage Patterns (B10)
	larks (B1)			(DTT) vertebrate	s (B13)			Dry-Season Water Table (C2)
	nt Deposits (B2)			Sulfide Oc	for $(C1)$			Saturation Visible on Aerial Imagery (C9)
	(B3)			Rhizospher	es along	l ivina Root	ts (C3)	Geomorphic Position (D2)
Algal Ma	at or Crust (B4)			of Reduce	d Iron (C4	g })		Shallow Aquitard (D3)
Iron Dep	oosits (B5)		Recent Iro	n Reductio	on in Tille	, d Soils (C6))	FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted or	Stressed	Plants (D	1) (LRR A)		Raised Ant Mounds (D6) (LRR A)
🗌 Inundati	on Visible on Aerial	lmagery (B	7) 🗌 Other (Exp	olain in Re	marks)			Frost-Heave Hummocks (D7)
Sparsely	Vegetated Concav	e Surface (B8)					
Field Obser	rvations:							
Surface Wat	ter Present?	res 🗌 🛛 N	o 🛛 🛛 Depth (inche	s):				
Water Table	Present?	res 🗌 🛛 N	o 🖾 🛛 Depth (inche	s):				
Saturation F	Present?	res 🗌 🛛 N	o 🛛 🛛 Depth (inche	s):		Wetla	and Hyc	Irology Present? Yes 🗌 No 🛛
(Includes ca	piliary tringe) ecorded Data (stream		onitoring well aerial	photos pr	evious ind	spections)	if availa	ble:
		, guugo, m	ermoning wen, aeriar	priotos, pi		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	uvuna	
Remarks: H	vdrologic indicator D	2 ohserver	1					

Project/Site: 1415.0003 Hunt Elementary	City/Cou	Inty: Puyallup/Pierce	Sampling Date: <u>12/14/16</u>				
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP13				
Investigator(s): Richard Peel, Emily Swaim		Section, Township, Range: <u>14, 19, 4</u>					
Landform (hillslope, terrace, etc.): valley floor	Local r	elief (concave, convex, none): <u>concave</u>	Slope (%): <u>0</u>				
Subregion (LRR): A2	Lat: <u>47.12745</u>	Long: <u>-122.25658</u>	Datum: WGS84				
Soil Map Unit Name: Kapowsin		NWI classifica	tion: <u>N/A</u>				
Are climatic / hydrologic conditions on the site t	vpical for this time of year? Yes	No 🗌 (If no, explain in Remarks.)					
Are Vegetation, Soil, or Hydrology	v significantly disturbed?	Are "Normal Circumstances" pres	sent? Yes 🛛 No 🗌				
Are Vegetation, Soil, or Hydrology	<pre>/ naturally problematic?</pre>	(If needed, explain any answers ir	n Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present?YesHydric Soil Present?YesWetland Hydrology Present?Yes	⊠ No □ Is ⊠ No □ w ⊠ No □	a the Sampled Area i thin a Wetland? Yes ⊠ N	o 🗌				

Remarks: Wetland A. All three wetland criteria observed.

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover	Species?	Status	Number of Dominant Species	
1. Populus balsamifera	80	Y	FAC	That Are OBL, FACW, or FAC: 3	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 3	(B)
4.					()
	80	= Total (over	Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 15 ft)				That Are OBL, FACW, OF FAC. 100	(A/D)
1				Prevalence Index worksheet:	
2.				Total % Cover of:Multiply by:	
3.				OBL species x 1 =	
4.				FACW species x 2 =	
				FAC species x 3 =	
0		– Total (over	FACU species x 4 =	_
Herb Stratum (Plot size: 5 ft)			Jover		
1. Phalaris arundinacea	50	Y	FACW		(P)
2. Carex obnupta	35	Y	OBI		(D)
3. Rubus ursinus	5	N	FACU	Prevalence Index = B/A =	
4.				Hydrophytic Vegetation Indicators:	
5.				Rapid Test for Hydrophytic Vegetation	
6.				Dominance Test is >50%	
7.				□ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide suppo	rting
0				data in Remarks or on a separate sheet)
3			·	Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Expla	in)
· · · · · · · · · · · · · · · · · · ·	00	Tatal C		¹ Indicators of hydric soil and wetland hydrology	must
Woody Vine Stratum (Plot size: 30 ft)	90	= 10tal C	over	be present, unless disturbed or problematic.	
1					
2				Hydrophytic	
2		Total (Vegetation Present? Ves ⊠ No □	
% Bare Ground in Herb Stratum <u>10</u>			over		
Remarks: Hydrophytic vegetation criteria observed through	rapid and	dominance	e test.	1	

Sam	olina	Point:	DP13
	·····		<u></u>

Profile Des	cription: (Describ	e to the de	epth need	led to docun	nent the i	ndicator	or confirm	n the ab	sence	of indicators.)
Depth	Matrix			Redox	x Features	<u>.</u>				
(inches)	<u>Color (moist)</u>	%	<u>Color (</u>	moist)	%	Type ¹	Loc ²	Textur	e	Remarks
0-8	7.5YR 2.5/1	100						<u>SiLo</u>		Silt Loam
<u>8-12</u>	<u>5YR 5/2</u>	97	7.5YR	4/4	3	С	M	<u>GrLoS</u>	a	Gravelly loamy sand; compacted
					·					
¹ Type: C=C	oncentration, D=De	epletion, RI	M=Reduc	ed Matrix, CS	=Covered	l or Coat	ed Sand G	rains.	² Loc	cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to a	ll LRRs,	unless other	wise note	ed.)		In	dicato	ors for Problematic Hydric Soils ³ :
Histosol	(A1)		🗌 Sai	ndy Redox (S	5)] 2 cm	Muck (A10)
	bipedon (A2)		∐ Stri	ipped Matrix ((S6) Frank (F4)	(] Red	Parent Material (TF2)
	STIC (A3) $(A4)$			amy Nucky IVI	Ineral (F1)) (excep	(MLRAI)] very	Snallow Dark Surface (TF12)
	d Below Dark Surfa	ce (A11)		nleted Matrix	(E3)			L		
	ark Surface (A12)	00 (/ (/ / /)		dox Dark Sur	face (F6)			³	ndicato	ors of hydrophytic vegetation and
□ Sandy M	lucky Mineral (S1)			pleted Dark S	urface (F7	7)			wetla	nd hydrology must be present,
Sandy C	Bleyed Matrix (S4)		🗌 Re	dox Depressi	ons (F8)				unles	s disturbed or problematic.
Restrictive	Layer (if present):									
Туре:										
Depth (in	ches):							Hydr	ic Soil	Present? Yes 🛛 No 🗌
Remarks: H	ydric soil indicators	A11 and F	3 observe	ed. Compacte	ed sand ob	served a	at a depth c	of 12 incl	nes.	
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary Indi	cators (minimum of	one requi	ed; check	all that apply	()				<u>Secor</u>	ndary Indicators (2 or more required)
Surface	Water (A1)] Water-Stair	ned Leave	s (B9) (e	xcept MLF	RA	ΜW	ater-Stained Leaves (B9) (MLRA 1, 2,
🗌 High Wa	iter Table (A2)			1, 2, 4A	, and 4B)					4A, and 4B)
Saturatio	on (A3)] Salt Crust (B11)					rainage Patterns (B10)
🛛 Water M	arks (B1)			Aquatic Inv	ertebrates	(B13)				ry-Season Water Table (C2)
Sedimer	nt Deposits (B2)] Hydrogen S	Sulfide Od	or (C1)			🗌 Sa	aturation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Oxidized R	hizospher	es along	Living Roo	ts (C3)	G	eomorphic Position (D2)
Algal Ma	at or Crust (B4)			Presence o	f Reduced	d Iron (C4	4)		🗆 SI	hallow Aquitard (D3)
Iron Dep	oosits (B5)			Recent Iror	n Reductio	n in Tille	d Soils (C6	5)	🗆 F/	AC-Neutral Test (D5)
Surface	Soil Cracks (B6)			Stunted or	Stressed I	Plants (D	1) (LRR A))	🗌 Ra	aised Ant Mounds (D6) (LRR A)
Inundation	on Visible on Aeria	Imagery (37) 🗌] Other (Expl	ain in Rer	narks)			🗌 Fr	ost-Heave Hummocks (D7)
Sparsely	Vegetated Concar	ve Surface	(B8)							
Field Obser	vations:									
Surface Wat	ter Present?	Yes 🗌 🛛 🛛	No 🛛 🛛 🛛	Depth (inches):					
Water Table	Present?	Yes 🗌 🛛 🛛	No 🛛 🛛 🛛	Depth (inches):					
Saturation P	Present?	Yes 🗌 🛛 🛛	No 🛛 🛛 🛛	Depth (inches):		Wetl	and Hyd	drolog	y Present? Yes 🛛 No 🗌
(Includes ca	piliary tringe)	m daude i	nonitoring	well aerial r	hotos pre	vioue in	spections)	if avails	hle [.]	
		yauye, I		, non, acriai p		211003 111	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ii avalla	510.	
Domorko: L	udrologia indiantara	B1 P2 ~	d BO aha	anyod og wall	20.00000	danvindi	eator PO			
Remarks. H	yarologic mulcators	סו, סב, ar	10 00 60 005	erveu as well	as secon	uary mul	υαιυί Φθ.			

Project/Site: 1415.0003 Hunt Elementary	City/County	: Puyallup/Pierce	Sampling Date: <u>12/14/16</u>				
Applicant/Owner: Puyallup School District		State: WA	Sampling Point: DP14				
Investigator(s): Richard Peel, Emily Swaim	:	Section, Township, Range: <u>14, 19,</u>	4				
Landform (hillslope, terrace, etc.): Valley	Local relie	(concave, convex, none): <u>concav</u>	e Slope (%): <u>5</u>				
Subregion (LRR): A2	Lat: <u>47.12823</u>	Long: <u>-122.25682</u>	Datum: WGS84				
Soil Map Unit Name: Kapowsin		NWI classifi	cation: <u>N/A</u>				
Are climatic / hydrologic conditions on the site typica	al for this time of year? Yes 🛛	No 🗌 (If no, explain in Remarks	5.)				
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstances" p	resent? Yes 🛛 No 🗌				
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any answers	s in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.							
Hydrophytic Vegetation Present? Yes ⊠ Hydric Soil Present? Yes ⊠	No I Is the	e Sampled Area					

Hydric Soil Present?	Yes 🖾 No 🗌	within a Wetland?	
Wetland Hydrology Present?	Yes 🛛 No 🗌		
Remarks: Wetland B. All three wetland i	indicators observed.		

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft</u>)	% Cover	Species?	Status	Number of Dominant Species	
1. Fruit tree sp.	70	Y	FAC*	That Are OBL, FACW, or FAC: 5	(A)
2. Pinus monticola	20	Y	FACU	Total Number of Dominant	
3. Alnus rubra	10	N	FAC	Species Across All Strata: <u>6</u>	(B)
4				Demonst of Dominant Chaption	
		= Total C	over	That Are OBL, FACW, or FAC: 5/6	(A/B)
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)					(•)
1. <u>Rubus spectabilis</u>	20	<u>Y</u>	FAC	Prevalence Index worksheet:	
2. Acer circinatum	10	Y	FACU	Total % Cover of:Multiply by:	
3. <u>Spiraea dougasii</u>	10	Y	FACW	OBL species x 1 =	_
4				FACW species x 2 =	_
5				FAC species x 3 =	_
	40	= Total C	over	FACU species x 4 =	_
<u>Herb Stratum</u> (Plot size: <u>5 ft</u>)				UPL species x 5 =	_
1. Phalaris arundinacea	70	Y	FACW	Column Totals: (A)	(B)
2. Rubus ursinus	10	<u>N</u>	FACU		
3. Pteridium aquilinum	<u>10</u>	N	FACU	Prevalence Index = B/A =	
4				Hydrophytic Vegetation Indicators:	
5				Rapid Test for Hydrophytic Vegetation	
6.				Dominance Test is >50%	
7.				☐ Prevalence Index is ≤3.0 ¹	
8				Morphological Adaptations ¹ (Provide supporti	ng
9					
10					
11					1)
Woody Vine Stratum (Plot size: 30 ft)	90	= Total C	over	Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic.	iust
1. Rubus laciniatus	5	Y	FACU		
2.				Hydrophytic	
		= Total C	over	Present? Yes 🛛 No 🗌	
% Bare Ground in Herb Stratum <u>10</u>			0.01		
Remarks: Hydrophytic vegetation criteria observed through	dominance	e test. *List	ed as facult	ative for scoring purposes only.	

Profile Desc	cription: (Describ	be to the de	pth needed to docu	ment the	indicator	or confirm	the abse	ence of indicators.)
Depth	Matrix		Rede	ox Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
<u>0-10</u>	<u>10YR 2/1</u>	100	-				SaLo	sandy loam
<u>10-18</u>	<u>10YR 4/2</u>	92	<u>10YR 3/6</u>	7	С	Μ	<u>GrSaLo</u>	gravelly sandy loam
			10YR 7/4	1	D	Μ	GrSaLo	split redoximorphic features
¹ Type: C=C	oncentration, D=D	epletion, RM	I=Reduced Matrix, C	S=Cover	ed or Coat	ed Sand Gr	ains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (App	licable to al	I LRRs, unless othe	rwise no	oted.)		Ind	icators for Problematic Hydric Soils ³ :
	(A1) Vinadan (A2)		Sandy Redox (55) (SE)				2 cm Muck (A10) Red Derent Meterial (TE2)
Black His	stic (A3)			(30) Aineral (F	1) (excen	MIRA 1)		Very Shallow Dark Surface (TE12)
	n Sulfide (A4)		Loamy Gleved	Matrix (F	2)			Other (Explain in Remarks)
Depleted	Below Dark Surfa	ace (A11)	Depleted Matrix	(F3)	_,			
Thick Da	irk Surface (A12)		Redox Dark Su	rface (F6)		³ Ind	licators of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (F7)		١	wetland hydrology must be present,
Sandy G	leyed Matrix (S4)		Redox Depress	ions (F8)			1	unless disturbed or problematic.
Type	Layer (if present)	:						
Depth (in	ches).						Lludria	
	udria a cil in dia star						Hydric	
Remarks: Hy	dric soil indicators	SATT and Fa	observed.					
HYDROLO	GY							
Wetland Hy	drology Indicator	'S:						
Primary India	cators (minimum c	of one require	ed; check all that app	ly)	(= -) (5	Secondary Indicators (2 or more required)
Surface	Water (A1)		∐ Water-Sta	ined Leav	ves (B9) (e P)	xcept MLR		✓ Water-Stained Leaves (B9) (MLRA 1, 2, 44, and 48)
⊠ High wa	ter Table (A2)			A, and 4	5)		г	4A, and $4B$)
	arke (B1)			(DII) vertebrat	ee (B13)			\Box Dru-Season Water Table (C2)
	at Denosits (B2)			Sulfide (dor(C1)		L L	\Box Saturation Visible on Aerial Imagenv (C9)
	(B3)			Phizosobi	eres along	Living Roo	ts (C3)	
	t or Crust (B4)			of Reduc	ed Iron (C4	1)	ιο (00) [2 Γ	\Box Shallow Aguitard (D3)
	osits (B5)		Recent Iro	n Reduct	ion in Tille	d Soils (C6) [☐ FAC-Neutral Test (D5)
	Soil Cracks (B6)		Stunted or	Stresse	d Plants (D	1) (LRR A)	, Γ	Raised Ant Mounds (D6) (LRR A)
Inundation	on Visible on Aeria	l Imagery (B	7) 🗌 Other (Exp	blain in R	emarks)	, ()		Frost-Heave Hummocks (D7)
Sparsely	Vegetated Conca	ve Surface ((B8)					
Field Obser	vations:							
Surface Wat	er Present?	Yes 🛛 🛛 N	o 🗌 Depth (inche	s):				
Water Table	Present?	Yes 🛛 🛛 N	o 🗌 Depth (inche	s): <u>1</u>				
Saturation P	resent?	Yes 🛛 🛛 N	o 🗌 Depth (inche	s): <u>0</u>		Wetl	and Hydr	ology Present? Yes 🖂 No 🗌
(includes cap	(includes capillary fringe)							
Describe Recorded Data (stream gauge, monitoring weil, aenai protos, previous inspections), il available:								
Permetric: Hydrologic indicators A1, A2, A2 observed as well as accordeny indicators P0 and P2								
			WHICH AS WELL AS		iv inducato	ം പൗ മലവ L	16.	

RATING SUMMARY – Western Washington

Name of wetland (or ID #):	Wetland A				Date of site visit:	12/14/2016
Rated by Richard Peel and E	Emily Swain	Trained by Ec	ology?⊻	Yes 🗆 No	Date of training	3/31/2016
HGM Class used for rating	Depressional & Flats		Wetland	d has multipl	e HGM classes? □	Yes 🗹 No
NOTE: Form is not complete with out the figures requested (<i>figures can be combined</i>). Source of base aerial photo/map Google Earth 2016						

OVERALL WETLAND CATEGORY IV (based on functions ☑ or special characteristics □)

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat		
List appropriate rating (H, M, L)					
Site Potential	М	L	L		
Landscape Potential	М	М	L		
Value	Н	М	L	Tota	
Score Based on Ratings	7	5	3	15	

Score for each function based on three ratings (order of ratings is not *important*) 9 = H, H, H8 = H, H, M 7 = H, H, L 7 = H, M, M 6 = H, M, L 6 = 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	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	х

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	
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	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)	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 another figure)		
Boundary of area within 150 ft of the wetland (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 Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated. If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

- 1. Are the water levels in the entire unit usually controlled by tides except during floods?
 - ☑ NO go to 2
 □ YES the wetland class is Tidal Fringe go to 1.1
 - 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
 - ☑ NO Saltwater Tidal Fringe (Estuarine)
 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
 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;
 - $\hfill\square$ 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

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

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

- □ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
- □ The overbank flooding occurs at least once every 2 years.
- NO go to 6
 YES The wetland class is Riverine

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

[□] YES - The wetland class is Slope

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.*

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.

NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLANDS			
Water Quality Functions - Indicators that the site functions to improve water quality			
D 1.0. Does the site have the potential to improve water quality?			
D 1.1. 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	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. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic		0	
(use NRCS definitions).	Yes = 4 No = 0	0	
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shr Forested Cowardin classes):	ub, and/or		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	0	
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	3	
Wetland has persistent, ungrazed plants $> 1/10$ of area	points = 1		
Wetland has persistent, ungrazed plants $< 1/10$ of area	points $= 0$		
D 1.4. Characteristics of seasonal ponding or inundation:			
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	points $= 4$	2	
Area seasonally ponded is > $\frac{1}{4}$ total area of wetland	points $= 2$		
Area seasonally ponded is < 1/4 total area of wetland	points = 0		
Total for D 1 Add the points i	n the boxes above	7	

Rating of Site Potential If score is: 12 - 16 = H 2 6 - 11 = M 1 0 - 5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?			
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1	No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land u	ses that		1
generate pollutants?	Yes = 1	No = 0	I
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 wet	land that are		
not listed in questions D 2.1 - D 2.3?			0
Source	Yes = 1	No = 0	
Total for D 2	Add the points in the boxe	es above	1

Rating of Landscape Potential If score is: \Box 3 or 4 = H \supseteq 1 or 2 = M \Box 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site value	able to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a lake, or marine water that is on the 303(d) list?	stream, river, 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?			1
	Yes = 1	No = 0	I
D 3.3. Has the site been identified in a watershed or local plan as important for			2
which the unit is found)?	Yes = 2	No = 0	۷
Total for D 3	Add the points in the boxe	s above	3
Rating of Value If score is: $\forall 2 - 4 = H \Box 1 = M \Box 0 = L$	Record the	rating on	the first page

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water		
leaving it (no outlet) points :	= 4	
Wetland has an intermittently flowing stream or ditch, OR highly		
constricted permanently flowing outlet points :	= 2 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is		
a permanently flowing ditch points =	= 1	
Wetland has an unconstricted, or slightly constricted, surface outlet		
that is permanently flowing points :	= 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of		
the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the	he	
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 3	
Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	= 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. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio of the area of</i>		
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	
Total for D 4 Add the points in the boxes abo	ove 5	
Rating of Site Potential If score is: \Box 12 - 16 = H \Box 6 - 11 = M \boxdot 0 - 5 = LRecord the rating	g on the first page	
D 5.0. Does the landscape have the potential to support hydrologic function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No :	= 0 0	
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff	? 1	
$\frac{1}{1000}$	= 0	
Land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?		
	_ 0	
Yes = 1 No:	= 0	

Total for D 5Add the points in the boxes above

Rating of Landscape Potential If score is: \Box 3 = H \Box 1 or 2 = M \Box 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society? D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): Flooding occurs in a sub-basin that is immediately down-٠ gradient of unit. points = 21 • Surface flooding problems are in a sub-basin farther downgradient. points = 1points = 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

2

There are no problems with flooding downstream of the second s	he wetland. points = 0			
D 6.2. Has the site been identified as important for flood storage	e or flood	0		
conveyance in a regional flood control plan?	Yes = 2 No = 0	0		
Total for D 6	Add the points in the boxes above	1		
Rating of Value If score is: \Box 2 - 4 = H \Box 1 = M \Box 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: <i>Indicators are Cowardin classes and strata within the</i> <i>Forested class.</i> 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 Emergent Scrub-shrub (areas where shrubs have > 30% cover) Scrub-shrub (areas where trees have > 30% cover) Forested (areas where trees have > 30% cover) Istructure: 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 	1			
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 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 	1			
 Freshwater tidal wetland Preshwater tidal wetland 2 points 2 points 4 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 				
loosestrife, Canadian thistle				
If you counted:> 19 speciespoints = 25 - 19 speciespoints = 1< 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. <i>If you have four or more plant classes or three classes and open</i> <i>water, the rating is always high.</i>				
	0			
None = 0 pointsLow = 1 pointModerate = 2 points				
All three diagrams in this row are				

Wetland name or number



H 1.5. Sp Check th of points.	becial habitat features: e habitat features that are present in the wetland. <i>The number of checks is the number</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 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 slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)	
	At least ¹ / ₄ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)	
	Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	
Total for	H 1 Add the points in the boxes above	4

Rating of Site Potential If Score is: 15-18=H 7-14=M 0-6=L Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat function of the site?			
H 2.1 Accessible habitat (include only habitat that directly abuts	wetland unit).		
Calculate:			
2 % undisturbed habitat + (3 % moderate &	ow intensity land uses / 2) = 3.5%		
If total accessible habitat is:		0	
> ¹ / ₃ (33.3%) of 1 km Polygon	points = 3		
20 - 33% of 1 km Polygon	points = 2		
10 - 19% of 1 km Polygon	$\dot{points} = 1$		
< 10 % of 1 km Polygon	points = 0		
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.			
Calculate:			
30 % undisturbed habitat + (6 % moderate &	ow intensity land uses / 2) = 33%		
		1	
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 1km Polygon is high intensity	points = 0		
Total for H 2	Add the points in the boxes above	-1	

Rating of Landscape Potential If Score is: \Box 4 - 6 = H \Box 1 - 3 = M \odot < 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 polic	ies? 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 spec	ies	0
It is a Wetland of High Conservation Value as determined by the	e	0
Department of Natural Resources		
It has been categorized as an important habitat site in a local o regional comprehensive plan, in a Shoreline Master Plan, or in	r a	

watershed plan		
Site has 1 or 2 priority habitats (listed on next page) with in 100m		points = 1
Site does not meet any of the criteria above		points = 0
	-	

Rating of Value If Score is: \Box **2 = H** \Box **1 = M** \supseteq **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.

<u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u>or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>

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	Туре	Category
Check of	f any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
SC 1.0. I	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	
00.4.4	□ 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	
0040	$\Box \text{ Yes} = \text{Category I} \qquad \Box \text{ No - Go to SC 1.2}$	
SC 1.2.	Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
	I ne wetland is relatively undisturbed (nas no diking, ditching, filling, cultivation, grazing,	
	and has less than 10% cover of non-hative plant species. (If non-hative species are	
	Sparina, see page 25)	
	At least 74 of the landward edge of the wetland has a 100 ft burlet of shrub, forest, of un-	
	The wetland has at least two of the following features: tidal channels, depressions with	
	open water, or contiguous freshwater wetlands	
	$\Box V_{\text{OS}} = Category I \qquad \Box \qquad N_{\text{O}} = Category I$	
SC 2 0 1	$\frac{2}{100} = \frac{1}{100} = \frac{1}$	
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	
SC 2.2.	Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
	□ Yes = Category I □ No = Not WHCV	
SC 2.3.	Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
	http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
	Yes - Contact WNHP/WDNR and to SC 2.4 D No = Not WHCV	
SC 2.4.	Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation	
	Value and listed it on their website?	
	□ Yes = Category I □ No = Not WHCV	
SC 3.0. I	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	
00.04	wetland based on its functions.	
SC 3.1.	bees an area within the wetland unit have organic soil nonzons, either peaks or mucks,	
SC 2 2	\Box Yes - G0 IO 5C 3.3 \Box NO - G0 IO 5C 3.2	
30 3.2.	less than 16 in deep over bedrock, or an impermeable bardnan such as clay or volcanic	
	ash or that are floating on top of a lake or pond?	
	$\Box \operatorname{Vec}_{-} \operatorname{Co}_{-} \operatorname{to}_{-} \operatorname{SC}_{-} \operatorname{3}_{-} \Box \operatorname{Ne}_{-} \operatorname{Ic}_{-} \operatorname{not}_{-} \operatorname{a}_{-} \operatorname{hor}_{-} \operatorname{Ic}_{-} \operatorname{hor}_{-} \operatorname{Ic}_{-} \operatorname{hor}_{-} \operatorname{Ic}_{-} \operatorname{hor}_{-} \operatorname{Ic}_{-} \operatorname{hor}_{-} \operatorname{Ic}_{-} \operatorname{hor}_{-} \operatorname{Ic}_{-} \operatorname{hor}_{-} \operatorname{hor}_{-} \operatorname{Ic}_{-} \operatorname{hor}_{-} \operatorname{Ic}_{-} \operatorname{hor}_{-} $	
SC 3 3	Does an area with peats or mucks have more than 70% cover of mosses at ground	
00 0.0.	level AND at least a 30% cover of plant species listed in Table 4?	
	$\Box \text{ Yes} = \text{Is a Category I bog} \qquad \Box \text{ No - Go to SC 3.4}$	
	NOTE: If you are uncertain about the extent of mosses in the understory you may	
	substitute that criterion by measuring the pH of the water that seeps into a hole dug at	
	least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present,	
	the wetland is a bog.	
SC 3.4.	Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir,	

western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?

□ Yes = Is a Category I bog □ No = Is not a bog

Wetland name or number

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.	
П	Old-growth forests (west of Cascade crest): Stands of at least two tree species	
	forming a multi-layered canony with occasional small openings; with at least 8 trees/ac	
	(20 troos/ba) that are at least 200 years of an OP have a diameter at broast bright	
	(20 trees/fid) that are at least 200 years of age OK have a diameter at breast height (dbb) of 22 in (21 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).	
SC 5 0	\Box Yes = Category I \Box No = Not a forested wetland for this section	
30 3.0.	Note the wotland meet all of the following criteria of a wotland in a coastal larger?	
_	Does the wetland meet all of the following chiena of a wetland in a coastal lagoon?	
	The wettand lies in a depression adjacent to marine waters that is wholly or partially	
	separated from marine waters by sandbanks, gravel banks, sningle, or, less frequently,	
_	The large rain which the wetland is largeted contains reached water that is called an	
	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)	
	\square Yes - Go to SC 5.1 \square 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 than 20% cover of aggressive, opportunistic plant species (see list of	
	species on p. 100).	
	At least 34 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 ²)	
	□ 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	
	Ocean Shores-Copalis: Lands west of SR 115 and SR 109	
	\square Yes - Go to SC 6.1 \square 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 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	
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	
Catego	y of wetland based on Special Characteristics	
If you ar	swered No for all types, enter "Not Applicable" on Summary Form	

RATING SUMMARY – Western Washington

Name of wetland (or ID #):	Wetland B				Date of site visit:	12/14/2016
Rated by Richard Peel and E	Emily Swain	Trained by Eco	ology?⊮	Yes□ No	Date of training	3/31/2016
HGM Class used for rating	Depressional & Flats		Wetland	d has multipl	e HGM classes? □	Yes 🗹 No
NOTE: Form is not complete with out the figures requested (<i>figures can be combined</i>). Source of base aerial photo/map Google Earth 2016						

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		
Х	Category IV - Total score = 9 - 15		

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List app	propriate rating	g (H, M, L)	
Site Potential	М	L	L	
Landscape Potential	М	М	L	
Value	Н	М	L	Tota
Score Based on Ratings	7	5	3	15

Score for each function based on three ratings (order of ratings is not *important*) 9 = H, H, H8 = H, H, M 7 = H, H, L 7 = H, M, M 6 = H, M, L 6 = 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	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	х

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	
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	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)	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 another figure)		
Boundary of area within 150 ft of the wetland (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 Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated. If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

- 1. Are the water levels in the entire unit usually controlled by tides except during floods?
 - ☑ NO go to 2
 □ YES the wetland class is Tidal Fringe go to 1.1
 - 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
 - ☑ NO Saltwater Tidal Fringe (Estuarine)
 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
 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;
 - $\hfill\square$ 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

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

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

- □ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
- □ The overbank flooding occurs at least once every 2 years.
- NO go to 6
 YES The wetland class is Riverine

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding.

[□] YES - The wetland class is Slope

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.*

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.

NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLA	NDS	
Water Quality Functions - Indicators that the site functions to im	prove 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	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. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic		0
(use NRCS definitions).	Yes = 4 No = 0	0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shi Forested Cowardin classes):	ub, and/or	
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	2
Wetland has persistent, ungrazed, plants > $\frac{1}{2}$ of area	points = 3	3
Wetland has persistent, ungrazed plants $> 1/10$ of area	points $= 1$	
Wetland has persistent, ungrazed plants $< 1/10$ of area	points $= 0$	
D 1.4. Characteristics of seasonal ponding or inundation:		
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	points $= 4$	4
Area seasonally ponded is > $\frac{1}{4}$ total area of wetland	points $= 2$	
Area seasonally ponded is $< \frac{1}{4}$ total area of wetland	points $= 0$	
Total for D 1 Add the points	in the boxes above	9

Rating of Site Potential If score is: 12 - 16 = H 2 6 - 11 = M 1 0 - 5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?			
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1	No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land ι	ises that		0
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 we	land that are		
not listed in questions D 2.1 - D 2.3?			0
Source	Yes = 1	No = 0	
Total for D 2	Add the points in the boxe	s above	1

Rating of Landscape Potential If score is: \Box 3 or 4 = H \supseteq 1 or 2 = M \Box 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site value	able to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a lake, or marine water that is on the 303(d) list?	stream, river, Yes = 1	No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic re	source is on the 303(d) lis	t?	1
	Yes = 1	No = 0	I
D 3.3. Has the site been identified in a watershed or local plan a	s important for		2
which the unit is found)?	Yes = 2	No = 0	۷
Total for D 3	Add the points in the boxe	s above	3
Rating of Value If score is: $\forall 2 - 4 = H \Box 1 = M \Box 0 = L$	Record the	rating on	the first page

DEPRESSIONAL AND FLATS WETLAN	DS	
Hydrologic Functions - Indicators that the site functions to reduce flooding	and stream degr	adation
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 outlet	points = 2	2
Wetland is a flat depression (QUESTION 7 on key), whose outlet is	-	
a permanently flowing ditch	points $= 1$	
Wetland has an unconstricted, or slightly constricted, surface outlet		
that is permanently flowing	points $= 0$	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above	the bottom of	
the outlet. For wetlands with no outlet, measure from the surface of permanent wa	ater 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	3
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. <u>Contribution of the wetland to storage in the watershed</u> : <i>Estimate the ratio</i>	of the area of	
upstream basin contributing surface water to the wetland to the area of the wetland	d unit itself.	
The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	Ũ
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	
Total for D 4Add the points in	the boxes above	5
Rating of Site Potential If score is: \Box 12 - 16 = H \Box 6 - 11 = M \boxdot 0 - 5 = LR	ecord the rating on	the first page
D 5.0. Does the landscape have the potential to support hydrologic function of the	site?	
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate	excess runoff?	0
	Yes = 1 No = 0	
U 5.3. Is more than 25% of the contributing basin of the wetland covered with inte	nsive human	
land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?		1
1	Yes = 1 No = 0	

		-
Total for D 5 Add the points in the boxes a	bove 2	
		-

Rating of Landscape Potential If score is: \Box 3 = H \supseteq 1 or 2 = M \Box 0 = L Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description	n that best	
matches conditions around the wetland unit being fated. Do not add points. <u>Choose</u>	e the highest	
score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradi	ent into areas	
where flooding has damaged human or natural resources (e.g., houses or s	salmon redds):	
 Flooding occurs in a sub-basin that is immediately down- 		
gradient of unit.	points $= 2$	1
 Surface flooding problems are in a sub-basin farther down- 		I
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 second s	he wetland. points = 0	
D 6.2. Has the site been identified as important for flood storage	e or flood	0
conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	1
Rating of Value If score is: \Box 2 - 4 = H \Box 1 = M \Box 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: <i>Indicators are Cowardin classes and strata within the</i> <i>Forested class.</i> 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 Emergent Scrub-shrub (areas where shrubs have > 30% cover) Scrub-shrub (areas where trees have > 30% cover) Forested (areas where trees have > 30% cover) Istructure: 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 	1	
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 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 	1	
Lake Fringe wetland 2 points Free hyperter tidel wetland 2 points		
Freshwater tidal wetland 2 points		
Count the number of plant species in the wetland that cover at least 10 ft ² . <i>Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.</i> Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species points = 2 5 - 19 species points = 1		
< 5 species points = 0		
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <i>If you have four or more plant classes or three classes and open</i> <i>water, the rating is always high.</i>		
None = 0 points Low = 1 point Moderate = 2 points	1	
All three diagrams in this row are		

Wetland name or number



H 1.5. Sp Check the of points.	ecial habitat features: e habitat features that are present in the wetland. <i>The number of checks is the number</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 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see</i>	1
	H 1.1 for list of strata)	
I otal for	H 1 Add the points in the boxes above	5

Rating of Site Potential If Score is: 15-18=H 7-14=M 0-6=L Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat function of the site?		
H 2.1 Accessible habitat (include only habitat that directly abuts wetland unit).		
Calculate:		
2 % undisturbed habitat + (3 % moderate & l	ow intensity land uses / 2) = 3.5%	
If total accessible habitat is:		0
> 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:		
30 % undisturbed habitat + (6 % moderate & l	ow intensity land uses / 2) = 33%	
		1
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 1km Polygon is high intensity	points = 0	
Total for H 2	Add the points in the boxes above	-1

Rating of Landscape Potential If Score is: \Box 4 - 6 = H \Box 1 - 3 = M \odot < 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 plan	nt	
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		0
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) with in 100m		points = 1
Site does not meet any of the criteria above		points = 0
	-	

Rating of Value If Score is: \Box **2 = H** \Box **1 = M** \supseteq **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.

<u>http://wdfw.wa.gov/publications/00165/wdfw00165.pdf</u>or access the list from here: <u>http://wdfw.wa.gov/conservation/phs/list/</u>

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	Туре	Category
Check of	f any criteria that apply to the wetland. List the category when the appropriate criteria are met.	
SC 1.0. I	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?	
	$\Box Yes = Category I \qquad \Box No - Go \text{ to } SC 1.2$	
SC 1.2.	Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
	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 ³ / ₄ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-	
_	grazed or un-mowed grassiand.	
	I he 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)	
56 2.1.	Has the WA Department of Natural Resources updated their website to include the list	
50.2.2	Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
00 2.2.	The weight instead of the WDNN database as a weight of high conservation value: \Box Vec - Category I \Box No - Not WHCV	
SC 2 3	Is the wetland in a Section/Townshin/Range that contains a Natural Heritage wetland?	
00 2.0.	http://www1.dpr.wa.gov/php/refdesk/datasearch/wphpwetlands.pdf	
	$\Box \text{Yes - Contact WNHP/WDNR and to SC 2.4} \Box \text{No} = \text{Not WHCV}$	
SC 2 4	Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation	
Value and listed it on their website?		
	□ Yes = Category I □ No = Not WHCV	
SC 3.0.	Bogs	
	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation	
	in boos? 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?	
	\Box Yes - Go to SC 3.3 \Box 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.	
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

Wetland name or number

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 babitats? If you		
	answer YES you will still need to rate the wetland based on its functions.		
П	Old-growth forests (west of Cascade crest): Stands of at least two tree species		
	forming a multi-layered canony with occasional small openings; with at least 8 trees/ac		
	(20 troos/ba) that are at least 200 years of an OP have a diameter at broast bright		
	(20 trees/fid) that are at least 200 years of age OK have a diameter at breast height (dbb) of 22 in (21 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).		
SC 5 0	\Box Yes = Category I \Box No = Not a forested wetland for this section		
30 3.0.	Note the wotland meet all of the following criteria of a wotland in a coastal larger?		
_	Does the wetland meet all of the following chiena of a wetland in a coastal lagoon?		
	The weitand lies in a depression adjacent to marine waters that is whonly of partially		
	separated from marine waters by sandbanks, gravel banks, sningle, or, less frequently,		
_	The large rain which the wetland is largeted contains reached water that is called an		
	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)		
	\square Yes - Go to SC 5.1 \square 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 than 20% cover of aggressive, opportunistic plant species (see list of		
	species on p. 100).		
	At least 34 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 ²)		
	□ 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		
	Ocean Shores-Copalis: Lands west of SR 115 and SR 109		
	\square Yes - Go to SC 6.1 \square 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 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		
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		
Catego	y of wetland based on Special Characteristics		
If you ar	swered No for all types, enter "Not Applicable" on Summary Form		



Legend

0

🕹 1km

High Intensity 1.99 km

Moderate/Low Intensity 0.204 km

Project Site

🥏 Relitively Undisturbed 0.946 km

135th-St-Ct-E

-143rd-St-E-

2000 ft

-142nd-St-E-

TOTU AVE-E

Appendix F — Qualifications

All field inspections, jurisdictional wetland boundary delineations, OHW determinations, habitat assessments, and supporting documentation, including this <u>Wetland Delineation and Fish and</u> <u>Wildlife Habitat Assessment Report</u> prepared for the <u>Hunt Elementary Addition Project</u>, were prepared by, or under the direction of Alex Callender and Matt DeCaro of Soundview Consultants LLC. In addition, report preparation was performed by Kyla Caddey, and site inspections were performed by Richard Peel and Emily Swaim.

Alex Callender

Senior Scientist Professional Experience: 12 years

Alex Callender is a Senior Wetland Scientist with over 12 years of diverse professional experience in wetland and shoreland environmental consulting throughout the western Washington. Alex has extensive experience in conducting wetland delineations, assessing wetland systems, project planning, design, permitting, mitigation planning and design, regulatory coordination, implementation of monitoring programs, mitigation construction monitoring, mitigation monitoring and reporting. His experience includes delineating wetlands on extensively disturbed industrial sites, hydrologic studies, wildlife studies, identifying areas of illegal fill, project management, and shoreline project permitting.

Alex is a graduate of the Indiana University, BA in Economics with an MS in Environmental Science from The Evergreen State College. Alex is a certified Professional Wetland Scientist (# 2637) by the Society of Wetland Scientists. He has taught many of the Coastal Training Program classes for wetland and shoreland professionals, such as the Washington State Wetland Rating System, Designing Compensatory Mitigation and Restoration Projects, Reviewing Wetland Mitigation and Monitoring Plans and Determining the Ordinary High Water Mark in Western Washington. He is certified in the USACE Reg 4 training for the new Mountains Valleys and Coast Corp of Engineers Supplement. He is also a Pierce County Wetland Specialist, as well as a Fisheries Biologist, and Wildlife Biologist.

Matt DeCaro

Environmental Scientist Professional Experience: 8 years

Matt DeCaro is an Environmental Scientist with a diverse background in environmental compliance, project management, water quality, environmental due diligence, and site remediation. Matt earned a Bachelor of Science degree with a focus in Environmental Science from the Evergreen State College in Olympia, Washington, with additional graduate-level coursework and research in aquatic restoration and salmonid ecology. He has attended USFWS survey workshops for multiple threatened and endangered species, and participated on scores of biological assessments and evaluations for private and federal projects throughout the western United States. His experience includes NEPA compliance for federal projects; spotted owl surveys on federal and private lands; and invasive weed abatement.

Matt currently provides permitting and regulatory compliance assistance for land use projects from their planning stages through review, approval, and construction for Soundview Consultants LLC. Matt conducts code and regulation analysis; conducts wetland and stream delineations and fish & wildlife habitat assessments; provides land use planning assistance for residential, commercial, and

industrial projects; prepares reports and permit applications for local, State, and Federal review; and provides restoration and mitigation design. He has been formally trained in the use of the Washington State Wetland Rating System and Determination of Ordinary High Water Mark by the Washington State Department of Ecology.

Richard Peel

Wetland Scientist Professional Experience: 5 years

Richard Peel is a Wetland Scientist with diverse professional experience in wetland ecology, monitoring, and delineation throughout Washington and Oregon. Richard is Washington State trained in conducting wetland delineations, assessing wetland systems, mitigation planning and design, implementation of monitoring programs, mitigation monitoring and reporting. He also has extensive experience in an analytical laboratory using state-of-the-art equipment in bacteriological and chemical analysis of soil and water samples.

Richard is a graduate of The Evergreen State College, with dual degrees in Ecology and Economics. He has focused his academic career on ecology, disturbance ecology, chemistry, and the economic impacts of current environmental management. Richard has extensive training and field experience in wetland related disciplines, and has experience in wetland both east and west of The Cascades. He has been trained by The Washington State Department of Transportation's (WSDOT) Wetland Ecology and Monitoring team in the use of the wetland delineation, mitigation, monitoring, and restoration techniques. In addition, he was directed by WSDOT's Wetland Protection and Preservation Policy to ensure wetlands are preserved and protected whenever possible. This direction ensures no net loss in the quantity or quality of wetlands in the future and minimization of impacts to wetlands in the present. Mr. Peel is also a Pierce County Qualified Wetland Specialist.

Emily Swaim

Wetland Scientist/Field Geologist Professional Experience: 4 years

Emily Swaim is a Wetland Scientist and Field Geologist with a background in conducting Phase I, II and III Environmental Site Assessments (ESAs), underground natural gas pipeline and overhead electrical transmission line project assessment and environmental inspections, construction oversight, stormwater compliance inspections, soil sampling, delineating and assessing wetland and aquatic systems, and stormwater, floodplain, and wetland permitting. Ms. Swaim's expertise focuses on projects involving sensitive wetland and stream habitats where extensive team coordination and various regulatory challenges must be carefully and intelligently managed from project inception to completion.

Emily earned a Bachelor of Science degree in Geology from Illinois State University and Wetland Science and Management Professional Certification from the University of Washington, Seattle. She is also educated in Environmental Science from Iowa State University. Her education and experience has provided her with extensive knowledge on soils, wetland science, hydrogeology, sedimentology, environmental law, environmental geology, landscape ecology, and structural geology. Ms. Swaim has been formally trained in Hazardous Waste Operations and Emergency Response (HAZWOPER) and is Occupational Health and Safety Administration (OSHA) 30-hour Construction and 10-hour Construction certified. She is also a Pierce County Qualified Wetland Specialist.

Kyla Caddey

Staff Scientist Professional Experience: 2 years

Kyla Caddey is a Staff Scientist with 2 years of professional experience in riparian habitat restoration projects and environmental outreach and education throughout western Washington while working for both a state agency and a small non-profit. Kyla has a background in habitat restoration design, implementation, and maintenance, wildlife studies, grant writing, project management, report writing, water quality monitoring, benthic macroinvertebrate assessments, vegetation surveys and monitoring, forest surveying, data entry and statistical analysis, research writing and presentations, fish/salmonid monitoring, rain garden design and implementation, native plant nursery maintenance, and customer service.

Kyla earned a Bachelor of Science degree in Environmental Science and Resource Management from the University of Washington, Seattle with a focus in Wildlife Conservation and a minor in Quantitative Science. She has received formal training through the Coastal Training Program in Using the Credit-Debit Method in Estimating Mitigation Needs and Forage Fish Survey Techniques, as well as training through UW Botanic Gardens in Restoring Natural Areas in the Built Environment. Her education and experience has provided her with the knowledge base and tools necessary to assist in scientific field work and report preparation for the development, management, and implementation of Soundview Consultant's environmental planning and land use services.